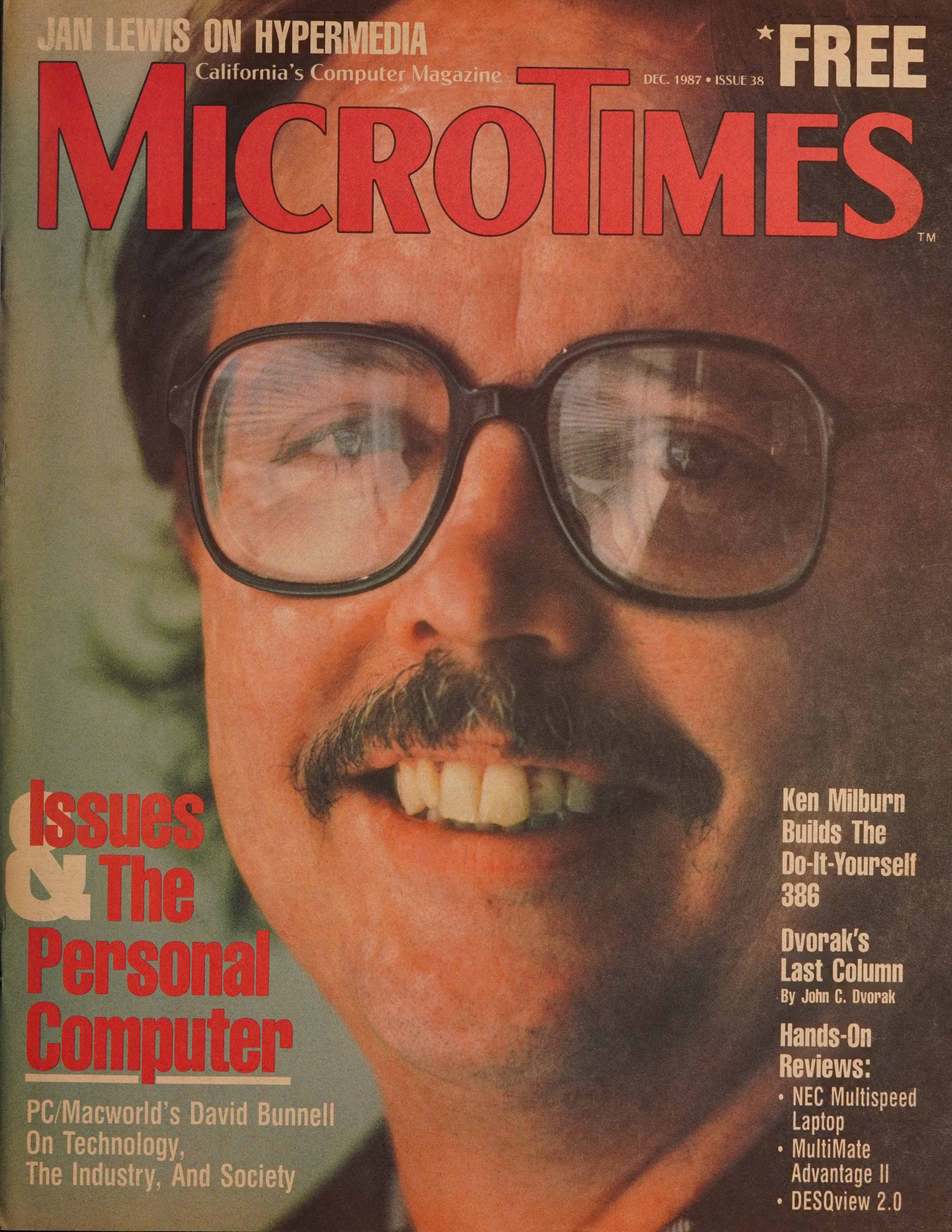


JAN LEWIS ON HYPERMEDIA

*FREE

California's Computer Magazine

MICROTIMES™

DEC. 1987 • ISSUE 38

Issues & The Personal Computer

PC/Macworld's David Bunnell On Technology, The Industry, And Society

Ken Milburn Builds The Do-It-Yourself 386

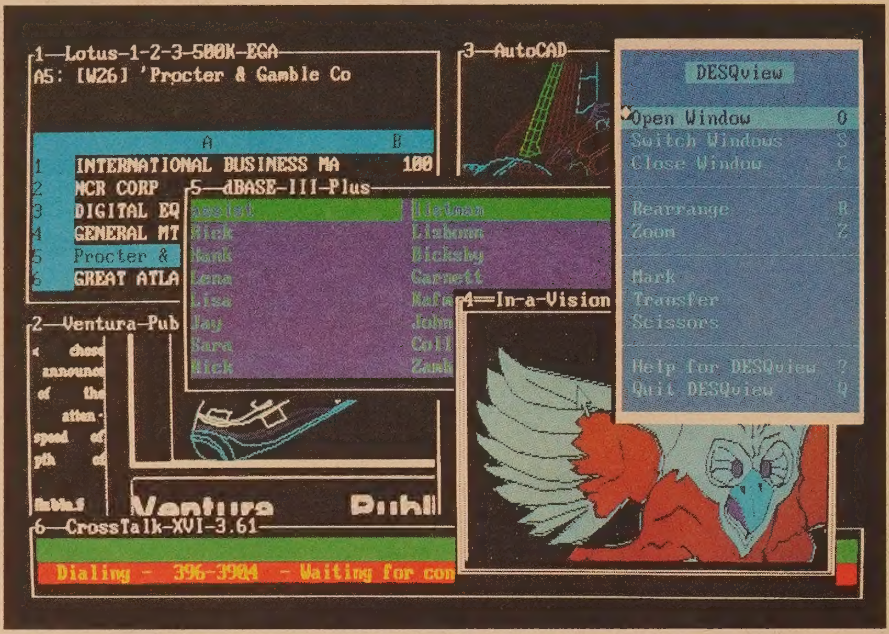
Dvorak's Last Column

By John C. Dvorak

Hands-On Reviews:

- NEC Multispeed Laptop
- MultiMate Advantage II
- DESQview 2.0

How to tell the difference between DESQview™ 2.0 and any other environment.



One picture is worth a thousand promises.

Selecting DESQview, the environment of choice, can give you the productivity and power you crave, without the loss of your old programs and hardware. If you like your existing programs, want to use them together, transfer data between them, print, sort, communicate with or process-in-background, yet still have the need to keep in place your favorite PC(8088, 8086, 80286 or 80386), DESQview is the "proven true" multitasking, multiwindowing environment for you. Best of all, DESQview 2.0 is here now, with all the money saving, time saving, and productivity features that others can only promise for the all-too-distant future.

And with DESQview's new graphics enhancements for Hercules, CGA, EGA, and VGA, Version 2.0 still offers the same award winning and pioneering features for programs that earned DESQview its leadership, only now you can also run desktop publishing programs, CAD programs, even GEM-™, Topview-™, and Microsoft Windows-™ specific programs. In some cases you'll add as little as 10–40K to your system overhead. Now you can have multi-tasking, multi-windowing, break the 640K habit too and still get an auto dialer, macros, menus for DOS and, for advanced users, a new complete application programmer's interface capability. No wonder that over the years, and especially in recent months, DESQview, and now DESQview 2.0 have earned extravagant praise from some of the most respected magazines in the industry.

INFO WORLD
DESQview 2.0
9.1
July 6, 1987

"Product of the Year" by readers vote in InfoWorld.

"Best PC Environment" by popular vote at Comdex Fall in PC Tech Journal's "System Builder" Contest.

"—I wouldn't want to run an IBM or compatible computer without DESQview"—InfoWorld, Michael Miller.

"A colossus among windowing environments"... "will run almost anything"—PC Week, Marvin Bryan.

"Windows, promises, but DESQview delivers"—MICROTIMES, Birrell Walsh.

No other environment has consistently pioneered features, openness, and productivity. See for yourself. Send in the coupon. The possibilities are endless with DESQview 2.0.

Attention Programmers: For more information about Quarterdeck's API, and future 386 program extensions, call us today.

SYSTEM REQUIREMENTS
IBM Personal Computer and 100% compatibles (with 8086, 8088, 80286 or 80386 processors) with monochrome or color display; IBM Personal System/2 • Memory: 640K recommended; for DESQview itself 0-145K • Expanded Memory (Optional): expanded memory boards compatible with the Intel AboveBoard; enhanced expanded memory boards compatible with the AST RAMpage • Disk: Two diskette drives or one diskette drive and a hard disk • Graphics Card (Optional): Hercules, IBM Color/Graphics (CGA), IBM Enhanced Graphics (EGA), IBM Personal System/2 Advanced Graphics (VGA) • Mouse (Optional): Mouse Systems, Microsoft and compatibles • Modem for Auto-Dialer (Optional): Hayes or Compatible • Operating System: PC-DOS 2.0-3.3; MS-DOS2.0-3.2 • Software: Most PC-DOS and MS-DOS application programs; programs specific to TopView 1.1, GEM 1.1 and Microsoft Windows 1.03 • Media: DESQview 2.0 is available on either 5¼" or 3½" floppy diskettes

Rush me DESQview 2.0! Today!

No. of Copies	Media 3½"/5¼"	Product	Retail Price ea.	Total
		DESQview 2.0	$129.95	$
		Shipping & Handling USA Outside USA	$ 5.00 $ 10.00	$
		Sales Tax (CA residents)	6.5%	$
			Amount Enclosed	$

Payment: ☐ Visa ☐ MC ☐ AMEX ☐ Check

Credit Card: Valid Since ______/______ Expiration ______/______

Card Number: ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

Credit Card Name ______

Shipping Address ______

City______ State______ Zip______ Telephone______

Mail to: Quarterdeck Office Systems, 150 Pico Boulevard, Santa Monica, CA 90405.
NOTE: If you own DESQview call us for a special upgrade offer, or send in your DESQview registration card. AST Special Edition users included.

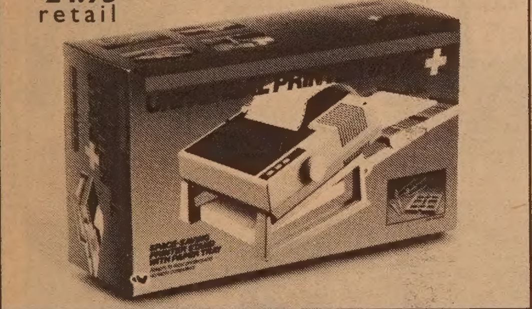
DESQview™
Quarterdeck

Quarterdeck Office Systems • 150 Pico Boulevard, Santa Monica, CA 90405 • (213) 392-9851

DESQview is a trademark of Quarterdeck Office Systems. AboveBoard is a trademark of Intel Corporation. Hayes is a trademark of Hayes MicroComputer Products Inc. IBM, PC, Personal System/2 and TopView are trademarks of International Business Machines Corporation. Microsoft Windows and MS are registered trademarks of Microsoft Corporation. Mouse Systems is a trademark of Metagraphics/Mouse Systems. RAMpage is a trademark of AST Research, Inc. GEM is a trademark of Digital Research. Hercules is a trademark of Hercules.

FOR A LIMITED TIME
GET ALL OF THIS
FREE

$24.95
retail



Universal Printer Stand with paper tray.

Parallel Printer Cable
Smart & Friendly

$39.95
retail

10 foot Parallel Printer Cable from Smart & Friendly, with 10 year limited warranty.

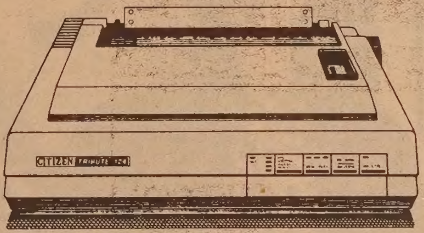
EMUL3 Additional Emulations for Citizen 24 Wire Printers.
M·A·P Systems, Inc.

$39.95
retail

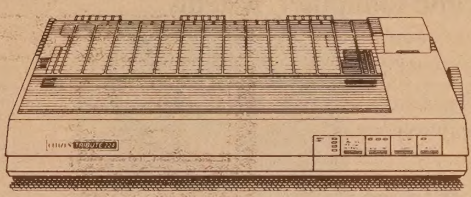
Software with LQ, MX, and FX emulation.

Free offer ends December 31, 1987

When you buy a Citizen Tribute 124 or 224 Printer



Citizen Tribute 124
24-Wire Dot Matrix Printer (80 Column)
Manufacturers suggested retail price $699



Citizen Tribute 224
24-Wire Dot Matrix Printer (136 Column)
Manufacturers suggested retail price $949

- **True letter quality** at 66 cps, and correspondence-quality at 132 cps.
- 200 cps logic-seeking print speed at 10 cpi in the data processing mode.
- **Push or pull feed** variable-width tractor (Model 124); Push feed variable-width tractor (Model 224).
- Automatic paper loading.
- Top, rear, or bottom feed with automatic single sheet loading (Model 124); Top or rear feed (Model 224).
- 24K-byte buffer and high resolution output at up to 360 dpi for complete graphics capability.
- Optional color graphics and text available (Model 124 only).
- Expandable with optional character fonts and emulations.
- Compatible with all leading software.
- Full one year warranty on parts, labor, and printhead.

Hurry! Supplies are limited.
Only at these participating dealers:

HIGH TECHNOLOGY DISTRIBUTING COMPANY, INC.

Citizen, the Citizen logo, Tribute 124 and Tribute 224 are trademarks of Citizen Watch Co., Ltd.

BAKERSFIELD
PRIORITY ONE COMPUTERS
2400 'A' WIEBEL ROAD
805-831-5464

BURBANK
PRIORITY ONE COMPUTERS
1033 HOLLYWOOD WAY
818-843-2500

CHATSWORTH
BOUDAIE COMPUTER TECHNOLOGY
20636 TULSA STREET
818-998-3416

PRIORITY ONE COMPUTERS
21622 PLUMMER STREET
818-709-5464

COSTA MESA
ASK/US GROUP
1835-B NEWPORT BLVD
714-642-7949

IRVINE
PRIORITY ONE COMPUTERS
18241 MC DURMOTT
714-660-1411

LOS ANGELES
UNITEC
3158 WILSHIRE BLVD
213-388-2400

MISSION HILLS
GENERIC COMPUTERS
2222 LUDLOW STREET
818-365-9304

NORTH HOLLYWOOD
SEFCO
7037 LAUREL CANYON
818-765-8882

RESEDA
COMSOFT
17727 VAN OWEN
818-996-8206

SAN JOSE
PRIORITY ONE COMPUTERS
542 WEST TRIMBLE ROAD
408-435-7300

SANTA MONICA
BETHEL COMPUTERS
2022-C BROADWAY
213-828-1415

SUN VALLEY
COMSOFT
8125 SAN FERNANDO ROAD
818-768-5528

WESTMINSTER
PRIORITY ONE COMPUTERS
14990 GOLDEN WEST STREET
714-895-2887

ISSUE NO. 38 DEC. 1987
MICROTIMES

FEATURES

60 Palantir Software: Windowing Its Way To Success

By Serge Timacheff
This Texas-based software publisher, a leading proponent of the *Windows* operating system, offers a series of integrated packages for creating personalized and automated work environments.

66 Jasmine Computer Systems

By Mary Eisenhart
This company's early choice of a direct-sales marketing strategy has paid big dividends in customer feedback — and the creation of popular, innovative drives for the Macintosh market.

73 The PC Port Controller

By Robert Beauchamp
This "poor man's LAN" connects up to ten RS232 devices at minimal cost.

75 Helping Developers From Startup To Success: The Software Entrepreneurs' Forum

By Helmi Kobler
This Palo Alto organization helps fledgling software developers with everything from advice on marketing to interaction with industry leaders.

78 The NEC Multispeed And Multispeed EL: Power And Functionality, With Or Without Your Desktop

By Wayne A. Yacco
These portable machines offer both power and convenience to the PC user, either as standalone units or as additions to your desktop machine.

HANDS ON

86 DESQview 2.0

By Woody Liswood
Multitasking that's available now for your PC.

92 Telephones And The PC Connection

By Ed Kahn
Software and hardware products to help your PC and telephone work together in new ways.

96 MultiMate Advantage II

By Robert Beauchamp
A MultiMate user looks at the new version of an old favorite.

COLUMNS

100 Data Base Management

By Warren Sirota
Magic, a new approach to application generation.

COVER STORY

COVER AND CONTENTS PHOTOS: © 1987 JIM MARSHALL

42

Personal Computers And The Big Picture: PCW's David Bunnell

By Mary Eisenhart

Successful publisher of some of the industry's most well-regarded magazines (e.g. *PC World*, *Macworld*) and shrewd observer of developing trends, David Bunnell also raises an outspoken — and often controversial — voice on issues that concern him. In this interview, he discusses the convictions that drive his work, what's ahead for the industry, and the impact of the personal computer on society.

104 PC Systems

By Ken Milburn
Here at last, the long-awaited do-it-yourself 386 machine.

110 Telecommunications

By Brock N. Meeks
The Fax, and nothing but the Fax....

112 UNIX

By Bennett Falk
Networking with UUCP.

115 Amiga

By Matthew Leeds
Butcher, another graphics package everybody needs.

116 Atari ST

By Helmi Kobler
The much-ballyhooed Megas arrive.

118 Apple II

By Mike Markowitz
Report from AppleFest '87.

DEPARTMENTS

9 But Jan Lewis Says...

Introduction to HyperMedia, and their impact on the way we deal with information.

11 Calendar Of Events

12 Business Products

22 Reviews

74 Buyers Guide

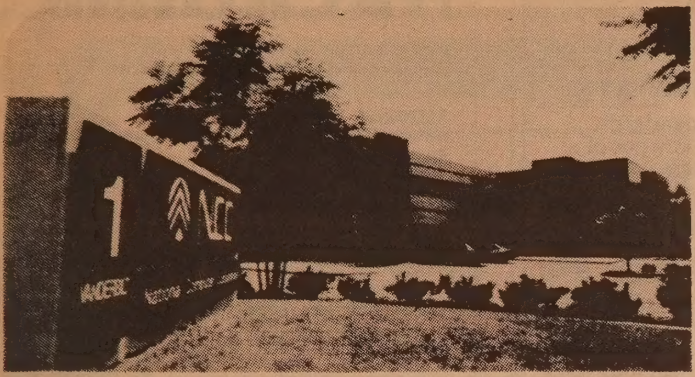
120 User Group Network

135 Classifieds

136 Index Of Advertisers

138 Dvorak's Last Column

By John C. Dvorak
On the relative importance of Danielle Steele and Bill Gates.



NCC National Computer Corporation

1 Vanderbilt, Irvine, CA 92718

• Tel. 714/380-0193 • FAX 714/380-4854

NCC Headquarters is a modern 24,000 sq. ft. building in the Irvine Spectrum.

NCC 286 COMPLETE SYSTEM

- 6/10 MHz Zero-Wait
- 512 KB RAM Expandable to 1 MB
- 1.2 MB Floppy Drive
- Clock/Calendar with Battery Backup
- Parallel/Serial/Game Ports
- 20 MB Hard Disk
- Hi-rel Monochrome Monitor
- AT-Style Keyboard
- Hard Disk/Floppy Controller
- FCC Approved

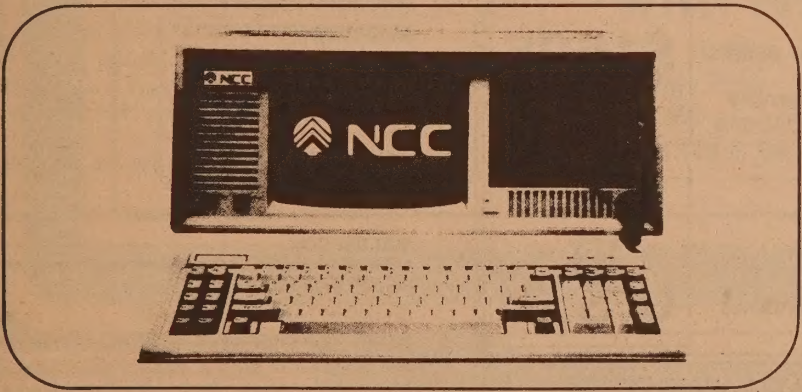
— $1,321 —

NCC 88 COMPLETE TURBO SYSTEM

- 4.77/10 MHz Zero-Wait
- 640 KB RAM
- 360 KB Floppy Drive with Controller
- Clock/Calendar with Battery Back-up
- Parallel/Serial/Game Ports
- 20 MB Hard Disk with Controller
- Hi-rel Monochrome Monitor
- AT-Style Keyboard
- FCC Approved

— $964 —

* Call for other options *



AT is a trademark of IBM

NCC 286 PORTABLE

- 10 MHz, Zero-Wait
- 512 KB RAM
- 1.2 MB Floppy Drive
- 20 MB Hard Disk
- Parallel/Serial/Game Ports

— $1,369 —

ALL PRODUCTS ARE WARRANTEED FOR ONE YEAR

TO PLACE YOUR ORDER
PLEASE CALL
714/380-0193
Office Hours: 9:00 a.m. to 6:00 p.m. (Mon-Sat)

ATTN: Dealers
Call For Quantity Pricing

FOR INFORMATION TO OPEN NEW NCC DEALERSHIPS
PLEASE CALL 714/380-0193 ASK FOR SEAN

TURBO CHARGE YOUR PC

THE ACCELERATOR 286

Replaces your computer's 8088 with an 80286 16-bit processor. It also includes 8K of zero-wait-state cache memory, and your software can run up to seven to nine times faster - faster than IBM AT.

Compatible with all software or any IBM PC, XT or compatible system. Includes 8088 Reboot and Cache enable/ disable switches.

$275

KINGTECH EGA CARD **$165**

Fully compatible with IBM EGA standards. 256K memory and offers full 16 colors out of a 64 color palette. Maximum resolution 640X480.

PC SHARING DISTRIBUTOR

Only $69.95 Plus Cables

Allows you to add another set of monitor and keyboard to your PC/XT/AT for sharing. Or you can hook up two computers to one set of keyboard and monitor. AB switch allows for switching back and forth. Only one user can be active at a time.

EGA/MULTI-SCAN MONITORS

NEC Multisync	$545
Taxan 770 Multi-scan EGA	$515
C.itoh EGA, .31 pitch	$350

PRINTERS

Brother 1509	$345
Brother 1409	$369
Brother 1709	$485
Toshiba 321SL	$495
Richo Daisy Wheel, 23 cps	$250

HARD/FLOPPY DISK DRIVES

Teac 360K/720K/1.4Mb	$85/$125/$149
Miniscribe 3650, 40 Mb, 65ms	$329
Logictech Mouse	$75
Logitech with PC Paint Brush	$109
Smart Link 1200/2400 Internal	$79/$175
Smart Link 1200/2400 External	$99/$195

U.S. MADE COMPUTER - OVERSEAS PRICE
SYSTEM 1800 - IBM AT COMPATIBLE

Basic System:
- 80286-8 , optional 6/8/10MHz
- 512K expandale to 1MB
- AT style keyboard
- Battery back clock/calendar
- ROM BIOS
- 8 expansion slots
- Five 1/2 height slots
- One year warranty

Options:
- 1.2 MB TEAC floppy drive
- Hard Disk/Floppy controller

W/ Options: $945

ONLY **$725**

Basic 8 MHZ System

FREE

DESKTOP PUBLISHING SEMINAR ON PAGEMAKER AND VENTURA

CALL TO REGISTER!

Ask about our special DTP package with free training.

NEW TANDON TARGA
WITH 14" MONITOR

- 80286 running at 6 or 8 MHz (software switchable)
- 1 Mbyte RAM on motherboard with memory mapper - compatible with Microsoft Windows and future OS/2 operating system
- 1.2 Mbyte floppy drive
- 20/40 Mbyte hard disk drives
- Parallel/serial ports on motherboard
- Monochrome/color graphics support
- Five expansion slots
- Three half-height device slots
- DOS 3.2, GWBASIC, and Microsoft Windows
- 14" monochrome monitor

ONLY **$1695**

20MB Hard Disk-System

Made in U.S.A.

EVEREX 386 FOR ONLY $1,995
100% COMPATIBLE WITH MS-DOS & XENIX

- INTEL 80386 32 BIT CPU
- 16 MHZ, 0/1 WAIT KEYBOARD SWITCHABLE
- 1 MB RAM
- 64K 45 NS CACHE MEMORY
- 1.2MB TEAC FLOPPY DISK
- HARD/FLOPPY DISK CONTROLLER
- 8 EXPANSION SLOTS
- 5 HALF HEIGHT DEVICE SLOTS
- AT STYLE KEYBOARD
- ONE YEAR WARRANTY

5.25" BERNOULLI DISK DRIVE -INCLUDES CONTROLLER	$850
EPSON LX86 SHEET FEEDER	$30
CITIZEN MSP 10/15/20/25 SHEET FEEDER	$50

VIDEO TRANSMITTER
Transmits computer/VCR video signal to any TV at home without cables

$59.95

Ideal Christmas Gift!!!

Simply plug the transmitter to your computer color card's composite outlet , your VCR or cable box's video and audio outlets, and you can receive the color picture and sound anywhere in the house. Minor assembly required.

PC Plus Corp.

MONTEREY PARK
710 E. GARVEY AVE.
(818)571-6955

BUENA PARK
7212 ORANGETHORPE AVE. #7A
(714)739-2158

15-day money-back warranty. Return authorization required.. Immediate delivery. No service charge on Visa, Master-Card. All COD orders cash/ cashier's check only. 6.5% sales tax for California residents. Hours: Monday-Satuday, 9 am - 6 pm Pacific Time

MICROTIMES

PUBLISHER/EDITOR Dennis Erokan

Consumer Audit BPA

EDITORIAL

MANAGING EDITOR Mary Eisenhart
EDITORIAL ASSISTANT Robert Beauchamp
PUBLISHER'S ASSISTANT Erica Stein
CONTRIBUTING EDITORS Robert D. Athey, Jr., Bennett Falk, Helmi Kobler, Matthew Leeds, Michael Markowitz, Brock Meeks, Ken Milburn, Warren Sirota, Jeff Spurrier, Birrell Walsh, Jim Wolcott, Wayne A. Yacco
CONTRIBUTING WRITERS Sue Albert, Lenny Bailes, Martha Conway, Kristen R. Coston, Bruce A. Fraser, Paul Hoffman, Woody Liswood, Ben Means, Jean Means, Nancy Mulvany, Aubrey Pilgrim, Sharon Rufener, Stephan Wickham
CONTRIBUTING PHOTOGRAPHERS Marc Franklin, Ken James, Pat Johnson, Ann Summa

EDITORIAL CONSULTANTS Don Hamilton, Pat Hamilton

DESIGN

CREATIVE DIRECTOR Lee Ann Nelson
ASSISTANT ART DIRECTOR Michael P. Didier
ART STAFF Mary Beth DeSantis, Tim Levin, Lisa Lusk, Missy Mote, Heidi Sommer, Deborah Venezia
PRODUCTION MANAGER Doug Boone
PRODUCTION ASSISTANT Sheryl Manchester
CAMERA OPERATOR John Moorehead
TYPESETTING Context, Image Factory, The Typesetting Shop, Inc.

ADMINISTRATION

ASSOCIATE PUBLISHER Miles Hurwitz
ACCOUNTING MANAGER Linda Schenk
ACCOUNTING ASSISTANT Lesley Hunter
ACCOUNTING Brian DeLuca, Rosemary Galten, Carol Hunter, Brian Murray
ADMINISTRATIVE ASSISTANTS Jef Brewer, Martha Conway, Chantel Schiffeler, Jill Stauffer

ADVERTISING

ASSOCIATE PUBLISHER Joe Amadeo
ASSISTANT TO THE ASSOCIATE PUBLISHER Anna Calofonos
ADVERTISING DIRECTOR Chuck Stanley
NATIONAL ACCOUNT DIRECTOR Bill Reefer
SC SALES MANAGER Reece A. Franklin
ADVERTISING & PROMOTION Susan R. Bower, David Boyles, DeAnne D'Zamba, Tina Gagliano, Barry Green, Lee Salem, Jane Shepherd
ADVERTISING ASSISTANTS Ruth Samberg (San Francisco), Robbie Wood (Los Angeles)
National Reps.: Carol Oppenheimer, John Lockhart

DISTRIBUTION

DISTRIBUTION MANAGER John Erokan
Art Holland, *Assistant Manager/LA*
DISTRIBUTION STAFF John Clefstad, Rand Crook, Roe Eyth, Danny Fernandez, Bruce A. Fraser, Frank Grygus, Eliot Kleinberg, Kirk Lanier, Trevor Loffs, Ron Lubben, Loren Ozaki, Jac Michanovic, Joseph Rafalo, Resource Dist., SDS, Bill Smith, Alan Spector; Racks by Free Distribution
MICROTIMES FOUNDERS Dennis Erokan, Don Hamilton, Pat Hamilton

This Vol. 4. No. 11, December 1987, Whole No. 38 MicroTimes, California's Computer Magazine, is published by BAM Publications, Inc., 5951 Canning St., Oakland, CA 94609. Phone (415) 652-3810. Los Angeles Office, 1800 N. Highland, Suite 220, Hollywood, CA 90028. Phone (213) 467-7878. San Jose Office, 36 Harold Ave., Suite 8, San Jose, CA 95117. Phone (408) 244-4400. Anaheim Office, 800 S. Brookhurst, Suite 1F, Anaheim, CA 92804. Phone (714) 776-2900. MicroTimes™ is © 1987 by BAM Publications, Inc. Subscriptions rate: 12 issues, U.S.: 3rd Class $24 (Allow 3 to 4 weeks for delivery), 1st Class $50 (Allow 1 to 2 weeks for delivery). MEXICO & CANADA: Surface Mail $40 (Allow 4 weeks for delivery), Air Mail $65 (Allow 1 week for delivery). OVERSEAS: Surface Mail $40 (Allow 6–10 weeks for delivery), Air Mail $160 (Allow 1 week for delivery). To receive sample issues, please send $1 ($4 for overseas) to cover postage costs. Back issues are $4 each. All rights reserved. Reproduction in whole or in part without permission of Publisher is strictly prohibited. Unsolicited material is gratefully accepted, but we can't be responsible for returning it unless it is accompanied by a stamped, self-addressed envelope. The staff and management of MicroTimes do not advocate or encourage the use of any product or service advertised herein for illegal purposes.

THE POWER AND THE PRICES YOU'VE BEEN LOOKING FOR·

ONLY AT MICROSTAR!

Microstar Super-XT

4.77 & 8 Mhz
30 MB HD
Phoenix Bios
150 W. Power Supply
360K FD
AT Style Keyboard
256K RAM
Hi-Res TTL Monitor

ONLY $799

Microstar-XT

Phoenix Bios
4.77/10 Mhz
30 MB HD
360K FD
150 W. Power Supply
AT Style Keyboard
640K RAM
Hi-Res TTL Monitor

ONLY $949

Microstar Super-AT

6 & 12 Mhz! — 0 & 1 Wait State
40 MB HD
Phoenix Bios
220 W. Power Supply
1.2 MB or 360K FD
AT Style Keyboard
512K
Hi-Res TTL Monitor
Mono-Graphics with PP

ONLY $1350

Microstar-Portable

9" Amber Monitor w/Graphics
Compaq Style Keyboard
3 Drive Slots

XT	AT
30 MB HD	40 MB HD
Phoenix Bios	Phoenix Bios
360K FD	1.2MB FD
512K RAM	1 MB RAM
$1045	**$1999**

Microstar 386

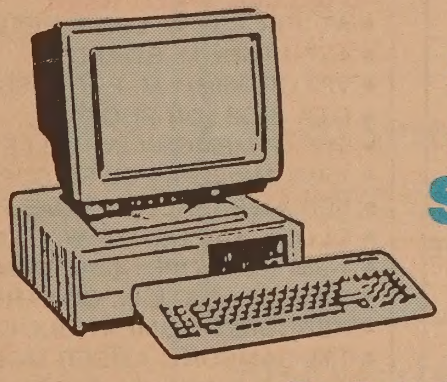
1 Wait State
640K RAM
14.2 Mhz (18.7 Norton)
1.2 MB FLP
30 MB HD
Enhanced Keyboard
Monochrome Monitor
Monochrome Graphics Adapter
Parallel Port/Clock-Calendar

ONLY $2999

PRINTERS

STAR MICRONICS

NP-10	$169
NX-10	$209
ND-10	$319
NX-15	$319
NR-15	$455
NB24-10/15	$429/649
NB-15	$849



SUPER COLOR SYSTEM

$875 COMPLETE

with NLQ Printer & Cable

4.77 & 10 Mhz
Phoenix Bios
360K FD
Color Tilt & Swivel Monitor
256K RAM
150 W. Power Supply
Color Graphics Card
AT Style Keyboard

- Products and Prices subject to availability. May change without notice.
- Prices reflect cash discount only.
- Sale ends 1/30/88.
- Schools, Corporations & Universities call for terms.

CALIFORNIA
MicroStar

1583 ST. GERTRUDE PL.
SANTA ANA, CA 92705

(714) 641-8664

DAO
PRODUCTS

U.S STANDARD AT LOWEST PRICES ANYWHERE

I.B.M. PC/AT/XT COMPATIBLE

IBM PC is a registered trade mark of IBM Corp.

XT BARE BONE SYSTEM

- XT FLIP TOP OR SLIDE IN CASE
- 646 KB EXPANDABLE M. BOARD
- 4.77-8MHz CLOCK SPEED
- 8 EXPANSION SLOTS & BIOS
- 8088/2 MICRO PROCESSOR
- 150W 110/220v POWER SUPPLY
- 256KB MEMORY INSTALLED
- FULLY ASSEMBLED & TESTED

$169.00

OPTIONS:

• 10MHz ADD ON	$17.00
• V20 ADD ON	$7.00
• 640 KB ADD ON	$59.00

XT BARE BONE SYSTEM 10MHz-286

- AT DELUXE SLIDE IN CASE
- IMB EXPANDABLE M. BOARD
- 6-10MHz CLOCK SPEED
- 8 EXPANSION SLOTS & BIOS
- 80286/10 MICRO PROCESSOR
- 200W 110/220v POWER SUPPLY
- 512KB MEMORY INSTALLED
- FULLY ASSEMBLED & TESTED

$479.00

OPTIONS:

• 12MHz ADD ON	$75.00
• O WAIT STATE ADD ON	$14.00
• IMB ADD ON	$69.00

AT-386 M. BOARD

- 32 BIT INTEL 80386
- SUPPORT 2MB OF 32 BIR SYSTEM BOARD MEMORY
- 3 TIMES FASTER 80286
- SOCKET 80287 — 80387
- IMB INSTALLED

$1,290.00

AT-386 SYSTEM

- AT DELUXE CASE
- 16MHz 386 M. BOARD
- SOCKET 80287—80387
- IMB 32 BIT INSTALLED
- 220W POWER SUPPLY
- AT WA2 CONTROLLER
- 1.2 MB FLOPPY DRIVE
- 80 MB SEAGATE OR SIMILAR HARD DRIVE
- SERIAL/PARALLEL/GAME
- EGA PARADISE — 480
  AT DELUXE ENHANLED K/B
- FULLY ASSEMBLED & TESTED

UANTITY IS LIMITED
ONE YEAR WARRANTY

$3,790.00

AT IR-3 OMB SYSTEM 10MHz

- AT JR CASE W. LED & RESET BUTTON
- 4.77-10MHz M. BOARD
- V20 OR 8088/1 M. PROCESSOR
- DTK BIOS (OR PHOENIX)
- 512 KB MEMORY INSTALLED
- 150W 110/220V POWER SUPPLY
- SERIAL/PARALLEL/GAME PORT
- CLOCK, CALENDAR W. CONTROLLER
- 1-360 KB FLOPPY (JAPAN MADE)
- 30MB SEAGATE W. CONTROLLER
- HERCULES COMPATIBLE CARD
- TTL SAMSUNG AMBER MONITOR W. TILT & SWIVEL BASE
- AT STYLE HEY BOARD
- FULLY ASSEMBLED & TESTED
- **ONE YEAR PART & LABOR WARRANTY**

$890.00

AT-286 40MB EGA SYSTEM

- AT DELUXE CASE W. LED & RESET
- 6-10MHz O WAIT STATE M. BOARD
- 80286/10 M. PROCESSOR
- DTK LATEST VERSION BIOS
- 640 KB MEMORY INSTALLED
- 200W 110/220V POWER SUPPLY
- CMOS CLOCK CALENDAR
- AT FDD & HDD WA2 CONTROLLER
- 1-2MB FLOPPY DRIVE (JAPAN MADE)
- 40MB HARD DISK
- EGA STANDARD CARD
- EGA MONITOR
- AT ENHANTED KEYBOARD
- FULLY ASSEMBLED & TESTED

ONE YEAR PART & LABOR WARRANTY

$1690.00

SPECIAL ON SALE FOR THIS MONTH

MORE POWER
BEAT ANY PRICE !!

• 150 W POWER SUPPLY	$39.00
• 200W POWER SUPPLY	$59.00
• SAMSUNG W. SWIVEL AMBER	$69.00
• EGA PARADISE-480 AUTOSWITCH	$179.00
• 40 MB MINISCRIBE FOR AT/XT	$349.00
• 101 KEYS ENHANCED K. BOARD	$49.00
• 20MB ST-225 W. W/D CONTROLLER	$259.00
• 30MB SEAGATE ST-238 W. CONTROLLER	$279.00
• NP-10 STAR PRINTER	$129.00
• PANASONIC 10911 (II)	$195.00
• 1200 BAUD MODEM	$79.00
• 2400 BAUD MODEM	$189.00

WE SPECIAL OFFER:

- **ANY CUSTOMER SOFTWARE DESIGN**
- **REPAIR HARD DISK & SYSTEM**
- **LOCAL AREA NETWORK**

DEALERS: CALL FOR QUANTITY PRICES

MasterCard VISA

HOURS: MON-FRI 9AM — 7PM
SATURDAY 10AM — 6PM

DAO MAKES A SIMPLE PROMISE
YOU'LL NEVER PAY LESS
IF YOU FIND A LOWER PRICE WE'LL REFUND DIFFERENCE WITHIN 10 DAYS
(FOR SAME QUALITY & QUANTITY)

GRAND OPENING
NEW STORE
IN BURBANK

DAO Products

(714) 539-2127

DAO MICRO
1520 E. 55th St.
Long Beach, CA 90806
(213) 422-4444

V&T COMPUTER I
2691 Richter # 131
Irvine, CA 92714
(714) 474-7748

V&T COMPUTER II
720 S. EUCLID # 3
ANAHEIM, CA 92803
(714) 635-1337

DAO PRODUCTS
12862 Joy St.- E
Garden Grove, CA 92640
(714) 539-2127

DAO COMPUSOFT
337 N. KEYSTONE
Burbank, CA 91506
(818) 953-9431

BUT JAN LEWIS SAYS . . .

Still Linear After All These Years, Or, HyperMedia Explained

Optical storage such as CD-ROM holds the promise of delivering massive amounts of information to consumers. The main problem up until now has been how to give the user the tools to process the information — the tools to navigate through the information space.

That's the biggest challenge. And the more vast the information space is, the more important it is to have a simple structure to navigate through it — a structure that provides instant access to databases in such a way that anyone can use them with ease and excitement.

I believe that Apple Computer, with the introduction of *HyperCard*, has taken the first step to providing those navigation tools to the mass market. HyperMedia for the masses. "Navigating through an information space" for the rest of us, so to speak.

So I'd like to spend the rest of this column explaining HyperMedia.

One of the things that I find most difficult in explaining HyperMedia, is that I'm constrained to explaining it in a linear format. This column, as I present it to you, the reader, is an unfolding of my thoughts in a linear fashion. The succession of thoughts is determined a priori. The order of the unfolding of my ideas is fixed. By me.

In the process, I'm constantly eliminating ideas — constantly controlling the urge to go off on a tangent. For every sentence I write, for every idea that I put into print, there have probably been 10 or 20 ideas that I've thrown away.

Furthermore, I'm the one who determines which tangents I write about and which ones I eliminate. You, the reader, have no say in it.

But HyperMedia will change all that. In fact, HyperMedia will change virtually all the ground rules of publishing information and consuming information. It will change them in three important ways.

First, for the "author" of the information, it will mean the removal of the linear constraint of traditional media. But it will also mean developing totally different ways of thinking, organizing, and presenting information. Instead of thinking of ways to eliminate or pare branches, authors will need to think of effective ways to explore and present those branches.

Second, software tools must be available for expansion and tracking of the branching possibilities. In fact, the more complex the information space, the stronger the need for a simple and familiar structure to navigate through it. *HyperCard* is an elegant start.

Third, and the most significant, is the user *involvement in the creation of the content*. The consumer of the information will no longer passively consume the "storyline" the author has selected, but will become an active agent in configuring the storyline. In the ideal HyperWorld, exploration of information by dimensions of time, topic, level of expertise, geography, etc. would be totally under the control of the user.

If 100,000 people read this column, they'll all read the same column. Yet if I were to have individual conversations with each of the readers, each conversation would be different.

Obviously, that can't happen, but the promise of HyperMedia is that I could create a database with so many branches that every individual could in fact end up with a different "storyline" that I would be telling them.

One person might want to ask why I refer to an "information space" instead of a database. One person might want to examine "the ground rules of publishing" that I assert will be changed. Someone else might want to explore how my views evolved, or who were my biggest influences. Someone else may hear the phrase "new ways of exploring and presenting branches" and want to find out what those might be.

Using the *HyperCard* metaphor, I'd love to give you buttons to click on right now to let you explore branches that never made it to this column: interactive storyboarding, the "Prosumer," resolution/navigational trade-offs, multi-media presentation considerations, terminology, authoring and artists tools, birth of a snowflake industry, design techniques for interactivity, and more.

But we're not there yet, folks, so hold onto your horses. We'll explore each of these topics in subsequent columns. ☐

Copyright 1987 by Jan Lewis. Jan Lewis is a leading analyst and commentator on the microcomputer industry, known for her keen insights and understanding of the industry's trajectory. As president of Lewis Research Corporation, Sunnyvale, CA, Ms. Lewis serves as marketing consultant to a variety of high tech companies.

Quality Products
from
Wilkinson Software

XT-2 Turbo System
- 4-Layer Turbo XT Mainboard 4.77/8 MHz
- 640K on mainboard
- 150W UL -Approved Power Supply
- Stylish AT-style case w/LED's & Keylock
- 2 TEAC Floppy Disk Drives
- Floppy Controller for 4 drives
- Monographics Videoboard w/printer port
- Monochrome Monitor— tilt n swivel
- PC/AT style Keyboard
- Serial Port

$795

XT-20 System (20 MB)
Same as above system with 1 Floppy Disk Drive and Seagate ST 225 20 MB Hard Drive & controller
$995

AT-20 Turbo System
- 8/10 MHz, 0/1 Wait State
- 640K RAM
- AT Style case w/ LEDs & buttons
- 1 - 360K Floppy Drive
- 20 MB (65 ms) Hard Disk
- Monographic videoboard w/ printer port
- Monochrome monitor w/ tilt/swivel base
- AT Style Keyboard

$1395

Options to all systems: Floppy drives, Hard drives, CGA Color Upgrades, EGA Color Upgrades, EMS Memory, Modems, Accelerators, and more!!

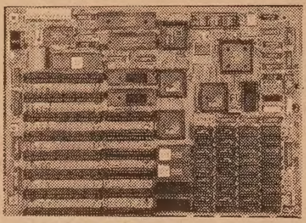
RUN COLOR GAMES on your MONO MONITOR with DO-COLOR
Works with any monographics card. Runs most CGA programs, even self-booting ones. The software is made in the U.S.A., offering the best performance for your mono system. Works great! Realistic & very useable—even for fast moving games.
$29.95
tax 1.80
shipping 3.00

NATIONALLY KNOWN FOR OUR SERVICE
Service & support on all DOS & CP/M Machines.

WILKINSON SOFTWARE
(714) 894-3216
6400 Westminster Blvd., Ste. 115, Bldg. B, Westminster, CA 92683

Very Important Products Very Impressive Prices

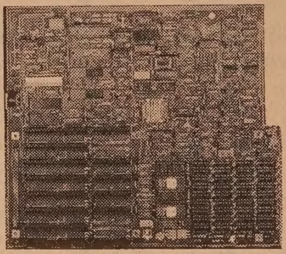
ATTENTION DEALERS: You're **V**ery **I**mportant **P**eople To Us



BABY 286 MAINBOARD

- 80286-10 CPU
- 10 MHz Zero Wait State
- Phoenix Bios

ACM-2130 .... **$295**



STANDARD 286 MAINBOARD

- 80286-10 CPU
- 10 MHz Zero Wait State
- Phoenix Bios

ACM-2030 .... **$295**

10 MHz MULTI TURBO MAINBOARD

- 8088-1 CPU
- Zero Wait State
- Phoenix Bios
- Multi I/O Functions On Board

ACM-8031 .... **$115**

MULTI VIDEO ADAPTER with PRINTER PORT

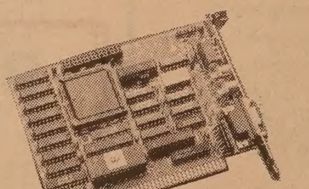
- CGA, MGA Hercules Compatible
- Plantronics Colorplus Compatible

ACV-3310 .... **$115**

10 MHz TURBO MAINBOARD

- 8088-1 (V20) CPU
- Zero Wait State
- Phoenix Bios
- On Board Memory expands to 1 MB

ACM-8030 .... **$75**



HEGA-II AUTO SWITCH ENHANCED GRAPHICS ADAPTER

- CGA, MGA Hercules Graphics Compatible
- EGA Compatible
- Plantronics Colorplus Compatible

ACV-4220 .... **$110**

MAINBOARDS: (With PHOENIX BIOS)

• STANDARD 286 6/8 MHZ MAINBOARD 80284-8, 1 Wait State, Phoenix Bios ACM-2010	$240
• 8 MHZ TURBO MAINBOARD 8088-2 (V20) ACM-8020	$70
• 8088 4.77 MAINBOARD 8088, Phoenix Bios ACM-8000	$65

VIDEO ADAPTERS

• MONOCHROME GRAPHICS ADAPTER w/Printer Port, MGA Herc. Compatible ACV-2330	$50
• COLOR GRAPHICS ADAPTER w/Printer Port ACV-1130	$45
• COLOR GRAPHICS ADAPTER ACV-1030	$38
• MONOCHROME GRAPHICS ADAPTER Hercules Graphics Compatible ACV-3010	$45
• ENHANCED GRAPHICS ADAPTER ACV-4010	$90

I/O ADAPTERS

• FOUR SERIAL PORT COMMUNICATIONS ADAPTER ACI-1010	$90
• TWO SERIAL PORT COMMUNICATIONS ADAPTER ACI-1110	$35
• TWO SERIAL PORTS/ONE PARALLEL PORT ADAPTER ACI-1210	$40
• 1.2 MB/360K FLOPPY DISK CONTROLLER ACI-1510	$50
• MULTIFUNCTION I/O ADAPTER Short Size 20 cm x 11 cm ACI-8020	$50
• 640K MULTIFUNCTION CARD	$60
• HARD DISK CONTROLLER	$150
• I/O PLUS II ACI-8110	$45
• FLOPPY DISK CONTROLLER ACI-8520	$28
• GAME I/O ADAPTER ACI-1410	$18
• PARALLEL PRINTER PORT ACI-1310	$18

KEYBOARDS

• 5060 KEYBOARD	$45
• ENHANCED KEYBOARD	$65

POWER SUPPLIES

• 150W SWITCHING POWER SUPPLY	$55
• 200W SWITCHING POWER SUPPLY	$89

- Prices Subject To Change Without Notice
- Not responsible for typographical errors
- Returns require authorization & may be subject to 15% restocking charge.

VIP
COMPUTER INC.
20427 Earl Street
Torrance, CA 90503

(213) 542-3259
(213) 542-6728
Fax No. (213) 214-1728

- Above Prices are for DEALERS ONLY. Minimum order: quantity 10.
- END USERS: CAll for the name of the dealer nearest you.

CALENDAR OF EVENTS

SPONSORED BY SMART AND FRIENDLY

October 31 Computer Swap. LA County Fairgrounds, Pomona. Call RK Productions at (800) 252-7927 for information.

October 31 San Bernardino Computer Show. National Orange Show Grounds. Contact Golden Gate Shows (415) 388-8893.

November 2-6 COMDEX/Fall '87. Las Vegas, NV. Call The Interface Group at (617) 449-6600 for information.

November 4 Financial Strategies For Today's Global Markets. First of three sessions. Red Lion Inn, 3050 Bristol Street, Costa Mesa, CA. Contact Dana Shappro, National Seminar Director, Peat Marwick High Technology Practice, 1800 Embarcadero Road, Suite 280, Palo Alto, CA 94303.

November 7 The Computer Sales Network. Los Angeles Convention Center, Petree Hall. Contact MicroSwap (213) 746-7394.

November 11 Manufacturing A Competitive Weapon. Second of three sessions. Red Lion Inn, 3050 Bristol Street, Costa Mesa, CA. Contact Dana Shappro, National Seminar Director, Peat Marwick High Technology Practice, 1800 Embarcadero Road, Suite 280, Palo Alto, CA 94303.

November 11-13 Localnet '87 Local Area Networking Conference And Exhibition. Los Angeles Convention Center. Contact CMC at (203) 852-0500 for more information.

November 14 San Fernando Valley Computer Swap. CSUN, North Campus, Northridge, CA. Contact Microshows (800) 433-7469.

November 14 Computer Swap. San Diego County Faiground, Del Mar. Call RK Productions at (800) 252-7927 for information.

November 18 Strategic Marketing: Achieving A Competitive Advantage. Third of three sessions. Red Lion Inn, 3050 Bristol Street, Costa Mesa, CA. Contact Dana Shappro, National Seminar Director, Peat Marwick High Technology Practice, 1800 Embarcadero Road, Suite 280, Palo Alto, CA 94303.

November 19-22 imPACT! '87. Electronic publishing conference. Hong Kong. Contact Seybold Seminars (213) 457-5850.

November 21 Computer Swap. Orange County Fairgrounds, Costa Mesa. Call RK Productions at (800) 252-7927 for information.

November 27-29 Southland Computer Faire And Conference. Santa Monica Civic Auditorium, Santa Monica. Call (213) 452-0165 for more information.

November 27-29 Forth Modification Laboratory (FORML) Conference. Asilomar Conference Center, Pacific Grove, CA. Contact the Forth Interest Group at (408) 277-0668 or write FORML, P.O. Box 8231, San Jose, CA 95155.

November 29 Computer & Hi-Tech Flea Market. Veterans Memorial Building, 4117 Overland Avenue, Culver City. Call (213) 276-1577 for information.

December 1-3 Computer Science Engineering Short Courses. UCLA Campus. Contact the UCLA Extension Department of Engineering and Science, P.O. Box 24901, Los Angeles, CA 90024. (213) 825-3858.

December 5 Computer Swap. LA County Fairgrounds, Pomona. Call RK Productions at (800) 252-7927 for information.

December 5-6. MIDI Expo. New York Hilton. Contact Expocon at 3695 Post Road, Southport, CT 06490. (203) 259-5734.

December 12 Computer Show. Orange County Fairgrounds, Costa Mesa, CA. Contact Microshows (800) 433-7469.

December 19 Computer Show. Pasadena Center, Pasadena, CA. Contact Microshows (800) 433-7469.

*As a community service, **MicroTimes** lists trade shows, seminars, and other special events in the Calendar of Events free of charge on a space-available basis. To improve the likelihood of your listing's timely inclusion, please make sure we have the necessary information no later than the first of the month, two months before the cover date of the issue in which you'd like it to appear (i.e. the deadline for the March issue, distributed during February, is January 1). Send to: MicroTimes Calendar of Events, 5951 Canning St., Oakland, CA 94609.*

News about user group meetings and other regularly scheduled activities should be sent to User Group Network at the same address.

Smart and Friendly

Big-name quality at no-name prices

The big-name diskettes are easy to find. And they're warranted. And they're *expensive.*

The no-name diskettes are of dubious quality.

What to do?

Introducing Smart & Friendly diskettes. They're 100% certified error-free. They have a *lifetime* replacement warranty. And they're priced right.

Try a box today, at these dealers:

ALHAMBRA
DARHAN COMPUTERS
908 EAST MAIN
818-570-0396

CANOGA PARK
COMPUTER LANE
22107 ROSCOE BLVD
818-884-8644

P C SERVICE
8379 TOPANGA CANYON BLVD #109
818-887-0040

CARSON
COMPLETE COMPUTER CURE
1165 EAST 230th STREET
213-513-1440

GARDEN GROVE
DAO PRODUCTS
12862 JOY STREET
714-539-2127

HUNTINGTON BEACH
USER FRIENDLY COMPUTERS
17410 BEACH BLVD
714-848-1955

LA CRESCENTA
BASIC COMPUTERS
3132 FOOTHILL BLVD
818-957-4515

LONG BEACH
INTELLIGENT SOLUTIONS
5547 EAST 7th STREET
213-494-6999

LOS ANGELES
A.I.C. COMPUTERS
477½ SO. FAIRFAX AVE
213-931-3504

ALTEC TECHNOLOGY CORPORATION
5751 RICKENBACKER ROAD
213-888-9100

BENCOM INFORMATION SYSTEMS
628 SO. WESTERN AVE
213-384-1103

COMPUTER HORIZON
3206 LOS FELIZ BLVD
213-665-0585

UNITEC
3158 WILSHIRE BLVD
213-388-2400

MISSION VIEJO
KEN'S COMPUTER
25856 MUIRLANDS BLVD
714-472-0965

NORTH HOLLYWOOD
LOGICAL CHOICE
6116 LANKERSHIM BLVD
818-760-0738

PALM SPRINGS
COMPUTERLAND
444 SOUTH INDIAN AVE
619-320-7262

POMONA
GUITAR STORE
496 EAST HOLT AVE
714-823-6448

SANTA ANA
MICRO EXPRESS
2114 SO. GRAND AVE
714-662-1973

SIMI VALLEY
DATA CONNECTION
1673 ROYAL AVE
805-527-7362

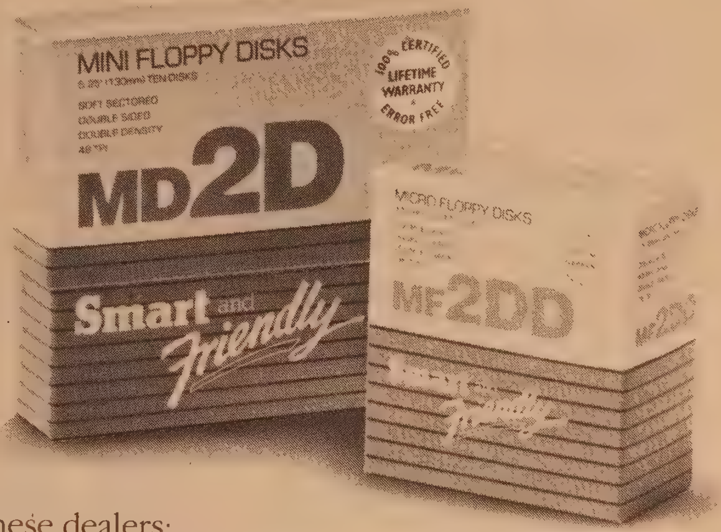
STUDIO CITY
FORAT ELECTRONICS
11514 VENTURA BLVD #1
818-763-3007

VAN NUYS
GUITAR GUITAR
5655 KATHERINE AVE
818-988-7876

WESTMINSTER
INFOSYSTEMS
14828 GOLDEN WEST AVE
714-898-3334

©Copyright 1987 Smart & Friendly

HIGH TECHNOLOGY DISTRIBUTING COMPANY, INC.



HARDWARE

The Blue Chip Personal Computer XT

From: *Blue Chip Electronics*
Price: *$599.99. Monitor extra.*
Reviewed by: *Robert D. Athey Jr.*

The Blue Chip Personal Computer XT was introduced a few months ago as an import from Hyundai of Korea. The prime selling points were low cost and IBM compatibility. The base computer is a 512K RAM single disk drive device for $599.99. The green monochrome monitor is available for $99.99 and the amber monochrome monitor sells for $129.99.

The computer has an 8088 chip which runs at 4.77 MHz. A socket is available for an 8087 math co-processor chip. The machine's operating system is MS-DOS 3.2 which is included for $99.99.

Other options (paid for separately!) include: a color monitor for $349.99, a high resolution CGA board for $139.99, a 360K floppy disk drive for $139.99 and a multifunction and memory expansion board (128K) with serial and game ports for $149.99.

Big Blue can't match these prices by any means, but they aren't uniquely low for clones either. What makes these computers unique is their marketing strategy—in addition to various computer dealers, they are being sold through such mass-market channels as Target, Fedco, Savemart and Federated Group. They are also being test marketed by Walmart and Toys 'R Us! The marketing organization behind this strategy is Yogo-Yogo, which appears to be aiming for the home as well as the small business market.

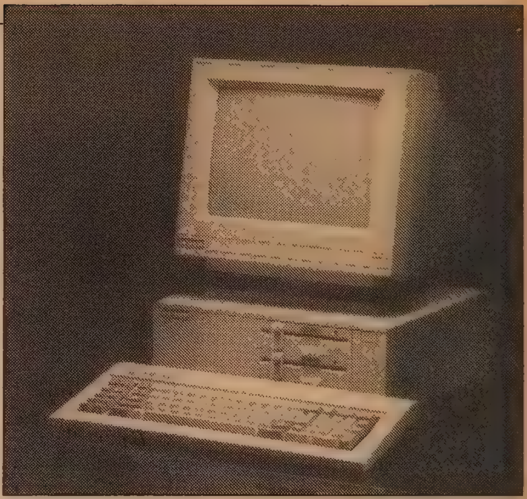
We found setting up the Blue Chip easy, as the documentation provided clear illustrations of the necessary steps. It was also well written and unusually lucid for the moderately experienced user. The documentation came in two large loose-leaf booklets. One of them had pockets that contained the three disks with the operating system and GWBASIC.

We encountered no major compatibility problems running standard programs on this machine, except with certain games that apparently don't like MS-DOS 3.2. Public domain programs *MBRAIN12*, *CWEEP214* and *SIMCGA* were useful and ran well.

The main task we tried on this computer was word processing with a spelling checker. The RAM was converted to a 360K RAM disk with *MBRAIN12*. *Perfect Writer/Perfect Speller* was then loaded into the C: RAM disk section. The spelling checker worked without any difficulty and the document could be modified as needed. When you only have one disk drive, this method of "creating" another "disk drive" in your RAM allows you to run your applications much faster than when you have to use disk swapping routines.

We also tried several games, including the bridge games *CYBRON* from Electronic Arts and *BridgePro* from Computer Management Corp. The action graphics games from the public domain that did not require CGA were *CENT* and *The WW I Biplane*. Adventure games such as *Rogue* and *Hack* were also played.

For games that did require CGA, the program *SIMCGA.COM* allowed them to run on the Blue Chip. The graphics were clear, and highlighted where necessary. The Washington PC Users's game *Dragons* was a bit fuzzy. This, however, this may be the fault of the program.



The Blue Chip Personal Computer XT offers low cost and good performance.

The computer had a workout of about four to six hours a day for several weeks and showed no sign of problems. An unusual squeal came from the fan for the first few minutes it operated, but the noise went away as it warmed up and has not reappeared. The fan was certainly efficient, as the room felt several degrees cooler than the rest of the house when it was on.

All in all, if you need a low cost MS-DOS device, the Blue Chip may be for you. As Hyundai is providing financial backing for Blue Chip, as part owner through a minority share purchase, you can certainly expect them to be around awhile to support the machine. Since the machine is

MicroCom Systems
OUTSTANDING SOFTWARE
For IBM PC's and Compatibles

$3.50 PER DISK SMALL QUANTITIES — $3.00 PER DISK FOR TEN OR MORE
$1 OFF 5 DISKS OR MORE WITH THIS COUPON

☐ **BUSINESS 1**—EZ-Forms business form generation
☐ **CAD 1**—Altamira, 4 color object oriented drawing prog ★
☐ **COMM 3**—Compression and archival utilities
[5] **COMM 4a,b,c,d,e**—(5 disks) RBBS Bulletin Board System 14.1D
[2] **DATABASE 1a,b**—(2 disks) The File Express menu driven general purpose database
☐ **DATABASE 3**—The pBASE relational database
☐ **EDUCATION 1**—Interactive DOS tutorial for new PC users. Makes learning DOS painless
[2] **FINANCE 1a,b**—(2 disks) PC Accountant 2.0 personal bookkeepping/finance management
☐ **GAMES 1**—3-D PacMan, Kong, SpaceWar, JanitJoe. ★
☐ **GAMES 2**—Qubert, Pango, Centipede, Monopoly. ★
☐ **GAMES 3**—Blackjack, Arm Chair QB, and Empire
☐ **GAMES 4**—Castle, StarTrek, and the original Adventure
☐ **GAMES 5**—The Hack adventure game from the universities. Like Rogue, only more complex
☐ **GAMES 6**—Pinball, Othello, Sopwith (fly one). ★
[2] **INFO 1a,b**—(2 disks) Cooking recipes database with keyword/ingredient retrieval prog. Add your own recipes
☐ **LANGUAGE 5**—Turbo Pascal interactive debugger, pop-up help, formatters, et cetera
☐ **LANGUAGE 7**—Complete Pascal interpreter, compiler, and debugger. Great for learning Pascal!
☐ **LANGUAGE 8**—Xlisp 1.7, the standard for AI langs
☐ **MUSIC 1**—Many clever tunes, and an excellent color graphics music editor
[2] **MUSIC 2a,b**—(2 disks) PianoMan 3.0 polyphonic music recording and playback program
☐ **ORGANIZER 1**—DeskMate, a Sidekick clone, and the Judy calendar program
☐ **ORGANIZER 3**—The PC-Outline Resident windowing outline editor/thought organizer.
☐ **PICTURES 2**—High res. digitized pictures. Graphics req'd
☐ **PINUP 2**—Provocative high res. pinups. Graphics req'd
☐ **PRINTER 1**—Font & sideways utils, spooler, banner mkr
☐ **UTILITIES 1**—A collection of invaluable DOS utilities
☐ **UTILITIES 2**—More invaluable DOS utilities. Too many to list here!
☐ **UTILITIES 3**—Complete set of debugging and diagnostic utilities

NEW RELEASES/UPDATES

[2] **CAD 2a,b**—(2 disks) Advanced 2D/3D drafting program. 640k. ★
☐ **CAD 3**—The PC-Flow, flowchart creation program. ★
[2] **COMM 1a,b**—(2 disks) Version 2 4 of the ever-popular Qmodem
[2] **COMM 2a,b**—(2 disks) Procomm 2.42, an excellent modem program with terminal emulation.

☐ **EDUCATION 2**—Learn the Presidents, States (and capitals) and the periodic table. ★
☐ **EDUCATION 5**—Learn Origami, the Japanese art of paper folding, with step by step animated instructions. ★
☐ **EDUCATION 7**—Learn Basic with this interactive Basic tutorial
[2] **FINANCES 3a,b**—(2 disks) Express Calc 3.12, a powerful spreadsheet program
☐ **GAMES 8**—The Striker helicopter attack game, and Risk, the game of world domination. ★
☐ **GAMES 9**—EGARisk, world domination in very high res. EGA required
☐ **GAMES 10**—Solitaire, Golfing, and Sailing in the Bermuda triangle. ★
☐ **GAMES 12**—Chess, Backgammon, and Wheel of Fortune. Graphics not required.
☐ **GRAPHICS 1**—Record and play back screen images! Excellent for demo creation, training, etc. ★
☐ **HUMOR 1**—Practical, impractical & other jokes.
[2] **INFO 2a,b**—(2 disks) Zip-Phone, national areacode/prefix to zip-code cross ref. A must for businesses.
☐ **LANGUAGE 1**—PDProlog 1.91a, an advanced language for artificial intelligence applications.
[2] **LANGUAGE 3a,b**—(2 disks) The A86 2.18 macro assembler and debugger. A complete assembly development system.
☐ **LANGUAGE 10**—Augusta, a subset of the Department of Defenses' new programming language ADA.
[2] **LANGUAGE 11a,b**—(2 disks) Forth-83 2.1 4th generation programming language.
☐ **SHELL 4**—Automenu customizable menu facility, and the HDM II 4.04 hard disk menuing system.
☐ **UTILITIES 5**—Utilities for formatting, parking, and optimizing hard disk drives.
☐ **UTILITIES 6**—Advanced utilitiess including Dpath, Esc, Hotdos, Pushdir and Popdir. Resident program utilities and more
☐ **UTILITIES 7**—More Advanced utilities including MasterKey (undeletes files from hard disks), Killdir
[2] **WORD 1a,b**—(2 disks) PC Write 2.71, a powerful word processing system, with built in spell checker

★Disks so marked require color graphics.

Cost of Disks ____________
CA Res Sales Tax ____________
Ship/Handling $1.00
Total Enclosed ____________

MT-12/87

MicroCom Systems
3673 Enochs Street, Santa Clara, CA 95051
(408) 737-9000
M-F 7 am-9 pm, Sat-Sun 8 am-5 pm

IT'S NOT 29¢ PLUS
THIS AND THAT, IT'S
29¢

With sleeves, tabs, labels

		EACH
5¼"	5¼" DS/DD Min. 100	
	39¢ Min. 50	29¢
	Color 5¼" DS/DD Min. 50	49¢
	5¼" IBM-AT HD Min. 50	79¢
	Box of 10 Min. 10 boxes	
	5¼" DS/DD	$4.29
	Box of 10 Min. 5 Boxes	
	Color 5¼" DS/DD	
	Free Plastic Case	$5.99
3½"	3½" SS/DD	
	Min. 25 Subject to availability	99¢
	3½" DS/DD	
	Min. 25 Subject to availability	$1.09
Data	205' 40 MB Mini Cartridge	
	3m/DEI Compatible Min. 5	$15.90
	600' 120 MB Data Cartridge	
	Min. 5	$19.20

Immediate shipping—Guaranteed satisfaction   Call for greater discounts on larger orders
Shipping: $3.50 per min. order/$1.50 each addtl. lot   MC/VISA accepted
100% Lifetime Warranty

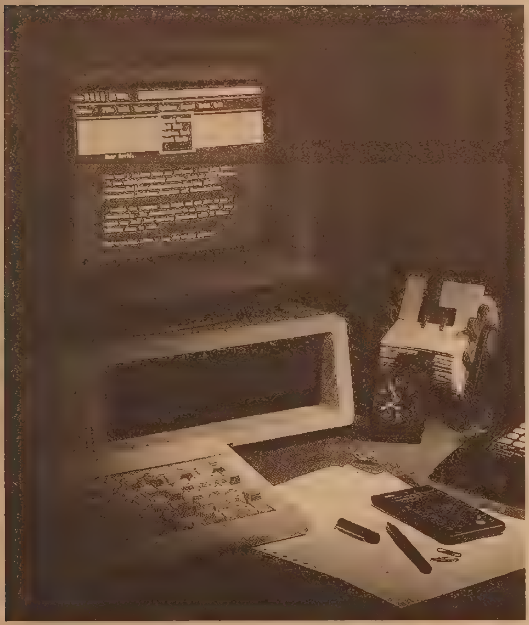
1-800-537-1600
Operator #268

MSP

Dept. No.1523 P.O. Box 61000
San Francisco, Ca. 94161

Better Working Eight-in-One

There Are Eight Productive Things You Can Do With A Computer. This Program Does Them All.



For Dealer inquiries only call:
1-800-323-8080
For consumer orders only call:
1-800-826-0706
Others call: 1-617-494-1200
Price: $59.95

Better Working Eight-in-One comes **COMPLETE,** with every productivity tool you could ever need. *Eight-in-One* is **INTEGRATED,** allowing you to pass work smoothly among all eight applications. Analyze figures from your data base with your spreadsheet, graph the results, and then place the graph in a letter to your boss. It's **SIMPLE,** with on-screen drop down menus that make it easy to learn commands. And if you get stuck, context sensitive help is right at your fingertips. Best of all, *Eight-in-One* is **POWERFUL,** giving you full-featured applications that contain everything you will need no matter how experienced you are or become.

- The **DESKTOP ORGANIZER** keeps track of appointments, issues reminders of birthdays and anniversaries, and gives you the current time and date all over the world. The "To-Do" List helps you organize your day-to-day obligations such as project due dates. Plus, the Address Book keeps all your important names, addresses and phone numbers.
- The **OUTLINER** provides you with a structure for organizing major and minor points into a coherent writing plan before you actually begin.
- The "What You See Is What You Get" format of our **WORD PROCESSOR** makes creating documents a breeze. What you see on the screen is what will appear when you print. The Word Processor features full editing and formatting functions such as cut and paste, word count, search and replace, directory listing, centering, text justification and settings for margins, tabs and line spacing. Design the layout of your document with headers, footers, automatic page numbering and an automatic table of contents. Special print features can be used, such as underlining, boldface, italics and compressed print. It's easy to set-up your printer ... simply select your printer from the list of pre-set printer models. Also, standard ASCII files are supported.
- The 100,000 word **SPELLING CORRECTOR** captures over 99% of spelling and typing errors and suggests correct spellings for misspelled words.
- Eight-In-One's **SPREADSHEET** gives you Lotus 1-2-3 import and export capabilities. Plus, it gives you 30,000 rows, 10,000 columns and a total of 30 mathematical functions.
- The **DATA BASE** can read and write in DBASE III compatible files. You can search by any field and create reports on the information on file. The Data Base will support up to 10,000 records with a maximum of 128 fields, and each record can hold up to 4000 characters.
- Present your numerical analysis visually with our **GRAPH** program. Take data from your Spreadsheet, Data Base, or input other figures and numbers to create bar charts, point and line graphs and pie charts.
- Eight-In-One's **COMMUNICATIONS** program takes full advantage of the features of Hayes compatible modems. The Communicator offers auto-dialing, a full or split screen option, and a baud rate of 300-1200.

IBM® PC and True IBM Compatibles
384K/Requires DOS 2.1 or higher
Supports Hard Drive Systems
5¼" Disk
*Graphics Adaptor
Required for Graphics Output

SPINNAKER™

Lotus 1-2-3 is © of Lotus Development Corp. All rights reserved.
DBASE III is © of Ashton-Tate. All rights reserved.
Better Working is a trademark of Spinnaker Software Corp.
© 1987 Spinnaker Software Corp., One Kendall Square, Cambridge, MA 02139.
All rights reserved. Spinnaker is a registered trademark of Spinnaker Software Corp.

Look for BetterWorking Eight-in-One and all Spinnaker products at these fine stores.

Academy Micro Center
638 S. Brookhurst Avenue
Anaheim, CA 92804
(714) 778-5677

Boyce Business Systems
1767 E. Main St.
El Cajon, CA 92021
(619) 579-4908

Calco Computers
1723 Oceanside Blvd. South
Oceanside, CA 92054
(619) 433-4119

Charlie Apple Software
2377 Main St.
Ventura, CA 93003
(805) 643-4488

Compu Key
12433 Wilshire Blvd.
Los Angeles, CA 90025
(213) 820-8182

Computer Haven
957 W. Foothill Blvd.
Upland, CA 91786
(714) 985-3278

Computer Outlet
5945 Mission Gorge Rd.
San Diego, CA 92121
(619) 282-6200

Computer Outlet
630 Nordahl Rd.
San Marcos, CA 92069
(619) 740-0112

Computer Plus
642 Third Ave.
Suite L
Chula-Vista, CA 92010
(619) 691-7844

J.D. Software/Bits and Bytes
333 S. Diamond Bar Blvd.
Diamond Bar, CA 91765
(714) 860-6859

MicroComputer Concepts
(714) 898-3002

Professional Software Systems
829 Hoover Ave.
National City, CA 92050
(619) 477-0851

Radio Shack/Poway
12845 Poway Rd.
Suite 217
Poway, CA 92064
(619) 271-5118

Saeco Computers
1122 E. Chevy Chase Dr.
Glendale, CA 91205
(213) 245-7708

Software Central
650 E. Colorado Blvd.
Pasadena, CA 91101
(818) 793-4101

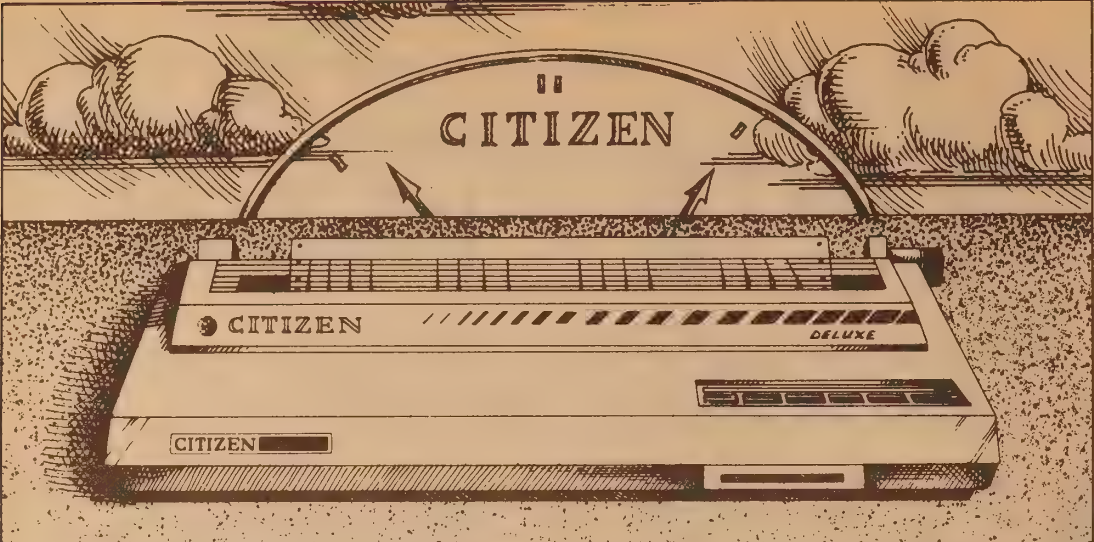
Software City/San Diego
3860 Convoy St.
Suite 106
San Diego, CA 92111
(619) 560-6886

Software Guild
3821 S. Bristol St.
Santa Ana/Costa Mesa, CA 92704
(714) 641-0332

Software Service Center
6667 Indiana Ave.
Riverside, CA 92506
(714) 787-4833

Software Service Center
13828 Red Hill Ave.
Tustin, CA 92680
(714) 544-0299

Software Stop/Maddy's Micro
612 El Camino North
Salinas, CA 93907
(408) 449-8800



WE HAVE MET THE COMPETITION.
AND IT IS US.

When Citizen™ introduced its new dot matrix printer, the MSP-50, we wanted to see who could match our performance and price.

After all, thanks to a convertible push or pull tractor this machine could handle all types of paper. It was fast. Up to 300 cps. Had color capability and 240 dpi graphics. Front panel feature controls. And compatibility with most major software.

When we were finished comparing, nothing compared. Except the new Citizen MSP-55. It had everything the MSP-50 had. Plus a wider carriage width. Of course, a little one-upmanship keeps us ahead of the competition.
Even if it is us.

CITIZEN™

Distributed by Arrow Electonics. Available at these locations:

Century Software
2601 Ocean Park Blvd.,
Suite 104
Santa Monica, CA 90405
(213) 477-4505

Personal Support Computer
10431 Santa Monica Blvd.
West Los Angeles, CA
90025
(213) 470-3382

Atronic Computers & Office Machines
15703 E. Valley Blvd.
City of Industry, CA 91744
(818) 333-0193

Streamline Solutions
1290 E. Center Court Drive,
#202
Covina, CA 91224
(818) 331-0879

Nimax, Inc.
7360 Carroll Rd., Suite B
San Diego, CA 92121
(619) 566-4800

Byte & Floppy
9880 Hibert St.
San Diego, CA 92131
(800) 544-0488
(619) 271-0611

ASC/US
1835-B Newport Blvd.,
#B121
Costa Mesa, CA 92627
(714) 642-7949

Xenon U.S.A., Inc.
17795 Sky park Circle,
Suite F
Irvine, CA 92714
(714) 250-4438

Arrow Electronics 2961 Dow Ave. Tustin, CA 92680 (714) 838-5422

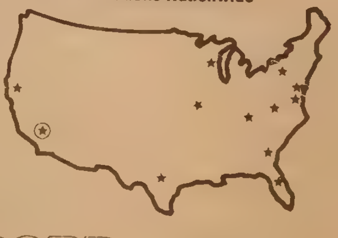
©1987 Citizen America Corporation. Citizen and the Citizen logo are trademarks of Citizen Watch Co., Ltd.

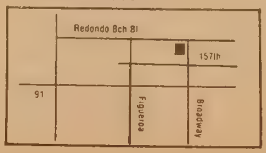
3 GOOD REASONS TO BUY FOUNTAIN

☑ High Performance ☑ National Network Services ☑ Economical Prices

FTN-286
- Fully IBM PC/AT Compatible
- Intel 80286 Microprocessor
- 6/8/10 MHz switchable CPU clock speed
- 80287 Co-processor socket available
- 1 MByte on-board memory; 512/512 or 640/384K split
- Standard IBM PC/AT 84 key keyboard layout
- 1.2 MByte Floppy Disk Drive
- Seagate ST 4038, 30 MByte fast Hard Disk Drive
- MS DOS 3.20/GW BASIC and operating manual
  Expandable to a professional system, using FOUNTAIN ADD-ON peripherals
- One year parts and labor warranty
  Options; Zero Wait State-10MHz-40 MByte Hard Disk-Monochrome Display Color Display-EGA

13 Locations Nationwide





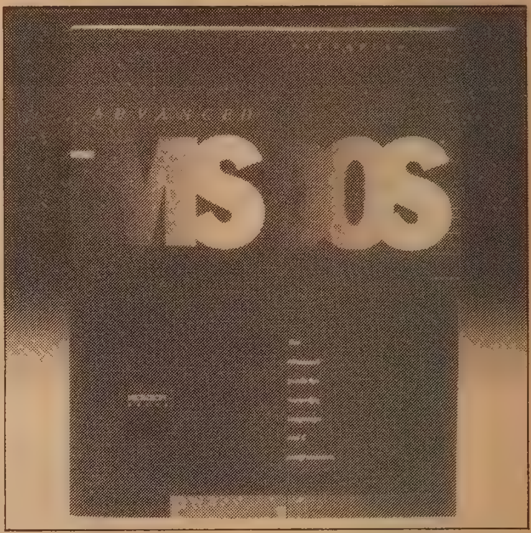
FOUNTECH CORP.

15524 Brodway Center St. Gardena (213) 515-0155

being marketed through a variety of channels, check into the service and support policies of the establishment where you're thinking of buying—your local computer dealer will probably offer greater support than some of the massive discount chains, and that's a major consideration for most users.

Blue Chip's Technical Support number is (800) 832-2272. (Blue Chip Electronics, 7305 W. Boston Ave., Chandler, AZ 85226. (602) 961-1485. Yogo-Yogo can be contacted at (617) 566-4733.)

BOOKS



Advanced MS-DOS is an indispensable tool for the serious programmer in the DOS world.

Advanced MS-DOS:
The Microsoft Guide for Assembly Language and C Programmers.

Written by: *Ray Duncan*
Published by: *Microsoft Press (1986) 496 pages*
List Price: *$22.95 softcover*
Reviewed by: *Wayne A. Yacco*

Advanced MS DOS is not a book for the faint-hearted. If you aren't prepared to open the guts of your operating system and stick your hands in, then this book may not serve any practical purpose for you. If you lack the curiosity to, at least, look into the bowels of DOS, then it is unlikely to provide you with any benefit whatsoever. On the other hand, if you have always wanted an illustrated guide into the maze of arcana that surrounds your microprocessor, here is your electronic *Gray's Anatomy*.

Duncan's work is logically divisible into two parts. The first part, Section I, contains the details necessary to program in the DOS environment. The second half includes Sections II, III, and IV and provides detailed references to the functions of the operating system.

The thirteen chapters in Section I provide the user with the information necessary to integrate programs with the operating system. The structure and organization of DOS are examined and memory is mapped. Vital protocols such as the program segment prefix are detailed. Techniques are provided for interfacing with the various resources of the DOS environment: monitors, keyboards, printers, and mass-storage devices.

The volume is laced throughout with tips and techniques for accomplishing virtually every basic programming task through the services provided by the operating system. Also set forth are the rules for creating well-behaved applications. There are many charts and tables for quickly comparing, learning or referencing various elements of DOS.

The DOS programming-support facilities have been covered. Step-by-step procedures and practices, required for program development, are also explained. Examples are contained in code samples

NEW FOR dBASE!

The Complete
dBASE
Companion

Introducing
APPLICATIONS
PLUS

APPLICATIONS PLUS
The Complete dBASE Companion
FOX & GELLER

100% COMPATIBLE
with CLIPPER
and FOXBASE+

- **QUICKCODE PLUS-** Application Generator
- **QUICKREPORT-** Relational Report-Writer
- **dGRAPH-** Graphics System

ALL IN ONE PACKAGE-- At One Very Affordable Price!

As a dBASE user, you've got some big needs: Creating application programs. Producing reports from your databases. Making sense out of all that data. A tall order, but at last there's a product that answers it...APPLICATIONS PLUS. It's been long overdue.

Triple Your Productivity... Overnight!

APPLICATIONS PLUS puts *three* powerful tools on your desktop. Each one is a powerful program in its own right. Together, they form a dBASE toolkit that's impossible to match at *any* price.
First,for applications, there's QUICKCODE PLUS, our widely-acclaimed application generator. InfoWorld said it was "remarkably easy to use."
PC Magazine called it "impressive". DataBased Advisor said the dBASE programs it writes are "outstanding in terms of form, structure, style, and internal documentation... offering unique user interfacing and multi-page and multi-file capability."

QUICKCODE PLUS can write almost any kind of dBASE program automatically... in minutes. Saving you countless hours.

Then there's QUICKREPORT, the dBASE report writer you've always wanted. A full-featured relational report writer, QUICKREPORT lets you design reports in seconds simply by drawing them on the screen. Computed fields, linked databases, sorting, grouping... QUICKREPORT has it all. PC Magazine said it was nothing short of "elegant". PC World called it "a top-notch report generator that's easy to learn and operate... a furlong ahead of dBASE." You can have it on your desk tomorrow.

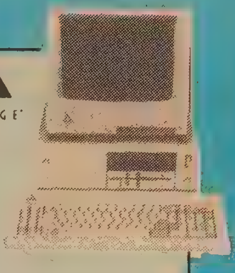
Finally, there's the new version of dGRAPH, our popular graphics system. Produce bar, line, and pie charts directly from dBASE databases. Output to your printer, color or Hercules monochrome screen, and plotter. dGRAPH lets you analyze your data in a variety of ways... gain new insights into your data!

Ask your local dealer for APPLICATIONS PLUS today. Start being three times as productive.
Call us and we'll send you a free QUICKCODE PLUS demo disk.

Fox & Geller
Available At All Egghead Discount Software Stores.

Step Into A World Of Savings

LEADING EDGE



2 Drive System	$850
1 Drive, 20 MEG System	$1095
1 Drive, 30 MEG System	$1145

ALL SYSTEMS INCLUDE MS DOS, GW BASIC & MANUALS

COMPAQ®

Deskpro

286 20 MEG	$2297
40 MEG	$2497
386 40 MEG	$4595
70 MEG	$5495
130 MEG.	$6450
Portable 20 MEG	$3650
40 MEG	$4250

ALL OTHER MODELS—CALL

IBM

Model 30-002	$1275
Model 30-021	$1715
Model 50-021	$2728
Model 60-041	$3975
Model 60-071	$4723
IBM AT 068/339	CALL

WE WILL TRY TO BEAT ANY PRICE!

AST RESEARCH INC.

Premium 286

w/20 MEG	$1850
w/40 MEG	$1995

Systems come complete with DOS and operation manuals.

NEC MULTISPEED PORTABLE COMPUTER

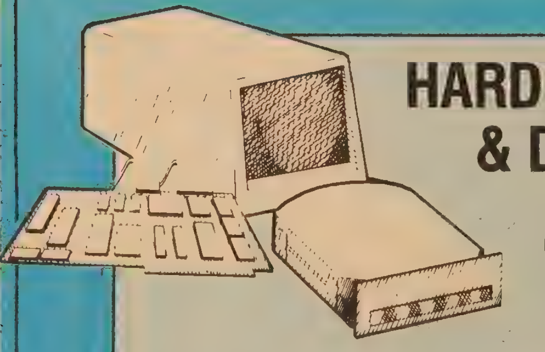
4.77/10MHz switchable (NEC V-30 chip) 640K RAM dual 3.5" 760K drives S twist LCD, 640Kx200 resolution built-in, pop-up firmware DOS 3.2

NEW EL

$1699

TOSHIBA PORTABLE

T1000	$850
T3100-20	$2999
Zenith Portables	CALL



HARD DISKS & DRIVES

CALL FOR LATEST PRICE

20 MEG HARD CARD	$395
TEAC 360 K DS/DD	$99
Toshiba 360K DS/DD	$99
Fujitsu 360K DS/DD	$89
Seagate 225-20MB H/H w/controller	$269
Seagate 238-30MB H/H w/controller card	$295
Seagate 4026 20 MEG	$475
Seagate 4038 30 MEG	$529
Seagate 4051 40 MEG	$689
Seagate 4096 80 MEG	$CALL
FUJI Hard disks w/controller (3½" technology low-power) 20 MEG	$395
30 MEG	$450

All tape backup units including Irwin, Teac, Archive

PRINTERS

LX800	CALL
New Epson FX86	CALL
New Epson FX286e	CALL
Epson LQ800	CALL
Epson LQ1000	CALL
Epson EX800	CALL
Epson EX 1000	CALL
Okidata 292 enhanced	545
Okidata 293 enhanced	695
Okidata 294	1095
Toshiba P 321 SL	535
Toshiba P 341	795
Toshiba P 351	945
Citizen MSP 10	260
Citizen MSP 15	339
Citizen MSP 20	CALL
Citizen MSP 40	315
Citizen MSP 55	471
Citizen 120D	160
Citizen Premiere 35	439
Citizen Tribute 224	635
Citizen Overture 110	1689
6′ Parallel Printer Cable	[illegible]
Universal Printer stand	19

MONITORS

Princeton Graphic Monitors	$CALL
Taxan (All models)	CALL
IBM Monochrome	CALL
IBM Color	CALL
Compaq Dual Mode	229
NEC Multisync	549
Sony KB-1311 CR (combination TV & RGB 640x200 monitor)	450
Casper color monitor—green/amber switch	325
Casper mono monitor w/tilt-swivel base	89
Nanao TTL softwhite	129
Nanao RGB 640x400 w/card	695
Nanao EGA	495
Samsung Amber	79
Samsung RGB	259
Samsung EGA	379

MODEMS

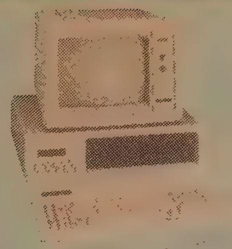
Hayes 1200B internal	$349
Hayes 1200 external	389
Hayes Compatible internal 1200 Baud modem w/software	79
Hayes compatible 1200 Baud external	99
US Robotics 2400B external	395
US Robotics 2400B internal	159
US Robotics 1200B internal	95
Volksmodem 1200 internal	99
Volksmodem 1200 external	129

NEW
Hewlett Packard Laser jet II w/toner cartridge
$1750

All prices subject to change without notice

(213) 618-8864

ALL SALES ARE FINAL
NO RETURN WITHOUT AUTHORIZATION NUMBER
ALL UNAUTHORIZED RETURNS SUBJECT TO 25% RESTOCKING CHARGE
3% charge on all C.O. D. orders
3% shipping and handling
(minimum $5 s/h on all shipped orders)



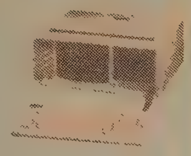
4.77/8MHz XT

- XT STYLE CASE W/SPEAKER
- PHOENIX BIOS
- 640K MEMORY
- 8 8 BIT SLOTS
- MONOGRAPHIC/PARALLEL PORTS
- TTL MONITOR W/TILT & SWIVEL BASE
- FLOPPY DISK CONTROLLER
- 2 360K FLOPPIES
- 5150 AT STYLE KEYBOARD
- MATH CO-PROCESSOR SLOT
- FCC & UL APPROVED
- 1 YEAR WARRANTY PARTS & LABOR

\$595

FOR COLOR UPGRADE ADD \$200
10 AND 12 MHz XTs AVAILABLE

XT OR AT PORTABLE



- 4.77/8MHz SWITCHABLE
- PHOENIX BIOS
- 640K MEMORY
- 8 8 BIT SLOTS
- MONOGRAPHICS/PARALLEL PORT
- TTL MONITOR
- FLOPPY DISK CONTROLLER
- 2 360K FLOPPIES
- KEYBOARD
- MATH CO-PROCESSOR SLOT
- FCC & UL APPROVED
- 1 YEAR WARRANTY PARTS & LABOR

\$750

AT HAS SAME AS ABOVE BUT

- 6/10 MHz SWITCHABLE
- 1 MEG MEMORY
- 6 16 BIT, 2 8 BIT SLOTS
- FLOPPY/HARDDISK CONTROLLER
- 1 1.2 MEG, 1 360K FLOPPIES

\$1450

6/10 MHz AT

- AT STYLE CASE W/SPEAKER
- PHOENIX BIOS
- 1 MEG MEMORY
- 6 16 BIT, 2 8 BIT SLOTS
- REAL TIME CLOCK & CALENDAR
- MONOGRAPHICS/PARALLEL PORTS
- TTL MONITOR W/TILT & SWIVEL BASE
- FLOPPY/HARD DISK CONTROLLER
- 1 1.2 MEG FLOPPY
- 5150 AT STYLE KEYBOARD
- MATH CO-PROCESSOR SLOT
- FCC & UL APPROVED
- 1 YEAR WARRANTY PARTS & LABOR

\$995

FOR COLOR UPGRADE ADD \$200
12 MHz and 386 ATs AVAILABLE

Come Visit Our Showroom & Demo These Computers!

SOFTWARE & CARDS

Data Base	
DBase III +	\$419
Reflex	79^{80}
RBASE System V	CALL
Wordprocessing Software	
Multimate/Advantage	\$229/309
MS Word	219
Wordperfect 4.2	219
Wordstar 2000/2000 +	239/299
Accounting Software	
Peachtree Back to Basics Accounting	\$219
Open systems GL/AR/AP/PR/INV	419
Utilities	
Norton Utilities	\$$59^{95}$
Turbo Lightning	59^{95}
Clipper	419
X-TREE	35

Copy II PC option board	89
COPY II PC	29
VP Planner	59^{95}
Fastback	109
Microsoft Windows	69
Borland	
Borland Turbo Lightning	\$$59^{95}$
Turbo Pascal 3.0 w/8087 & B.C.D. support	65
Sidekick (non-protected)	47^{95}
Super Key	39^{95}
Traveling sidekick	47^{95}
Languages	
NEW MS Macro Assembler 5.0	\$109
MS Fortran Compiler	229
NEW MS Quick Basic	CALL
NEW MS C Compiler 5.0	299
MS Cobol Compiler	439
MS Basic Compiler	255
MS Pascal Compiler	205

Graphics	
Chart Master	\$229
Diagram Master	199^{95}
Map Master	239^{95}
Sign Master	149^{95}
Certificate Maker	35^{97}
DP Graphics	99
Generic CAD	89^{95}
First CADD	49^{95}
Communications	
Smart Com II	\$99
Crosstalk XVI	CALL
Integrated	
Enable	\$359
Framework II	419
Lotus 123/Symphony	315/Call
Cards	
AST 6 Pak + w/64K	\$125
AST 6-Pak Premium w/512K	Call
AST Advantage w/128K	195

D.F.I. aboveboard AT	199
Hercules Color/Graphics	155
Hercules Mono/Graphics	195
Paradise EGA auto switch	369
Sigma 400 L or H	419
ATI Wondercard	CALL
Intel 8087/80287	CALL
Intel Above Board PC w/64K	259
Intel Above Board AT w/128K	369
Video 7 Vega Deluxe	259
Compatible Cards	
Monographics with parallel port	\$45
Colorgraphics with parallel port	45
Floppy controller with cable	29
Multi I/O with floppy controller	59
Multifunction card (6) w/384K	125
Serial port with clock/calendar	35
Parallel port only	29
EGA (no parallel port)	135

THIS MONTH'S SPECIALS

Taxan Multiscan 770+ monitor and 570+
card offering up to 800 x 600 resolution

\$729

Desktop Publishing

Aldus Pagemaker	\$495
Xerox Ventura Publisher	\$495

Software World

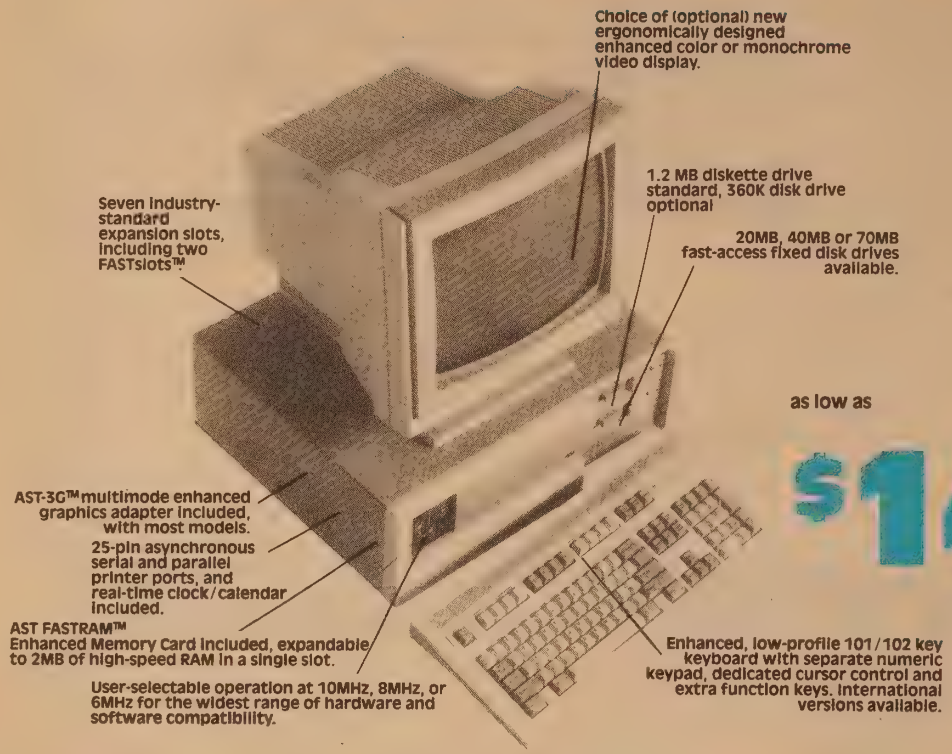
(213) 618-8864

20655 S. Western #104
Torrance, CA 90501

Welcome to Our:

ONE MONTH SPECIAL!

PC MAGAZINE EDITOR'S CHOICE
Recently, PC Magazine awarded the AST Premium/286 with their Editor's Choice Award for its "winning price/performance combination." "The Premium/286 is without a doubt the best-looking and best-performing system with a 10MHz rating. Its quality makes its price a bargain."



Choice of (optional) new ergonomically designed enhanced color or monochrome video display.
Seven industry-standard expansion slots, including two FASTslots™
1.2 MB diskette drive standard, 360K disk drive optional
20MB, 40MB or 70MB fast-access fixed disk drives available.
AST-3G™ multimode enhanced graphics adapter included, with most models.
25-pin asynchronous serial and parallel printer ports, and real-time clock/calendar included.
AST FASTRAM™ Enhanced Memory Card included, expandable to 2MB of high-speed RAM in a single slot.
User-selectable operation at 10MHz, 8MHz, or 6MHz for the widest range of hardware and software compatibility.
Enhanced, low-profile 101/102 key keyboard with separate numeric keypad, dedicated cursor control and extra function keys. International versions available.

as low as

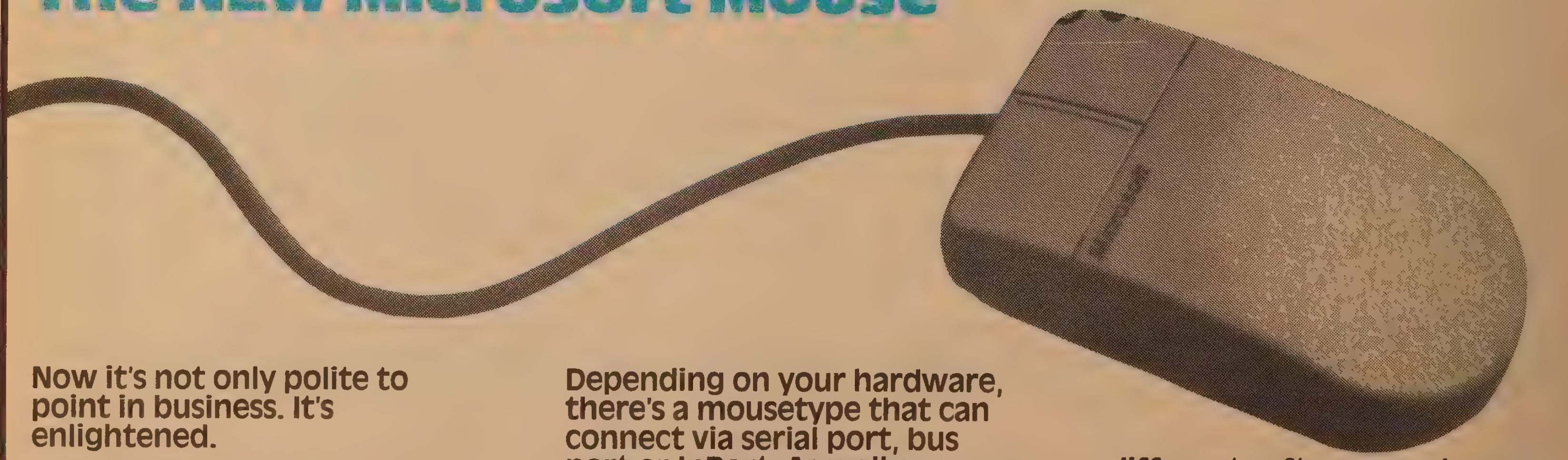
$1495

AST RESEARCH INC.

PREMIUM/286

Standard Equipment
10MHz 80286
(0 wait state)
7 Expansion Slots (1 8-bit)
FASTRAM Enhanced Memory
1.2MB half height Disk Drive
Input/Output Ports
Front Panel Controls
MS/DOS Included
2 manuals
ONE YEAR LIMITED WARRANTY

The NEW Microsoft Mouse



Now it's not only polite to point in business. It's enlightened.

Our smallest mouse ever has been redesigned to fit your hand more comfortably. At the same time, it gives you increased pointing accuracy with a significant decrease in wrist movement.

Depending on your hardware, there's a mousetype that can connect via serial port, bus port or InPort. As well as a configuration that's specifically designed for the IBM PS/2 systems.

And to make our new mouse even more appealing, we've combined it with three different software packages. You get your choice of Easy-CAD, a powerful, easy-to-use computer-aided design program. Or Windows 2.0 and PC Paintbrush® for Windows. Or Mouse Menus and Microsoft Paintbrush.

Catch this Mouse at a Great Price.

Computer-ease 213 559-1763

10590 "A" Pico Blvd. West Los Angeles, CA 90064

AST, AST Logo & RAMpage registered AST Premium, Advantage Premium, I/O Mini II, FASTslots, FASTRAM, & AST-3G trademarks AST Research

Personal Computer AT, registered & PC/XT trademark International Business Machines
DESQview trademark Quarterdeck

and complete programs for assembly and C languages. They abound to the extent of necessitating a companion diskette which is available separately from Microsoft for $16.95, delivered.

Files and record handling are covered in one chapter and templates are provided for both FCB- and Handle-file-access methods. The hierarchy of disk-subdirectories and directory organization is treated in a separate chapter that also discusses volume labels. A third chapter examines the physical organization of disk storage including the formats and contents of the file allocation table, directory and boot sector.

Memory allocation, expanded memory, the environment block and the EXEC function are discussed in chpaters nine and ten. In the last three chapters of the section, software and hardware interrupts, the interrupt vector table, installable device drivers, and DOS filters are examined.

The reference section includes most of the system interrupts for both DOS and the BIOS. A few, like BIOS interrupt 13H (19 decimal), are not fully expanded upon. Most of the interrupts, however, are explained in great detail. The same information is available from IBM only by careful reading of the BIOS listings or the DOS Technical Reference. Interrupts for the LIM Expanded Memory Specification (EMS) are also included in a third reference section.

This book has an abundance of information on the DOS environment within personal computers. It brings together the essential material from several important references. Nearly all of the material applies equally to both MS- and PC-DOS, and many exceptions are pointed out and explained for each. The single disappointment for me was the scant coverage of terminate-and-stay-resident programs. No major example, such as those given for device drivers and filters, was provided for this class of program. What is provided is clearly presented, well organized, and extremely useful. Although I also have the references upon which is it based, it is still an indispensable resource.

SPREADSHEETS

VIP Professional:

A Lotus 1-2-3 Compatible Spreadsheet for the Apple II Family

Published by: *ISD marketing (1986)*
For: *Apple IIGS (512K) or Apple IIe, IIc (256K, Transwarp Accelerator card recommended)*
List Price: *$300 (IIGS), $250 (IIe, IIc)*
Reviewed by: *Mike Markowitz*

VIP Professional is an integrated spreadsheet program that closely emulates the conventions and command syntax of *Lotus 1-2-3* (the standard business spreadsheet for the IBM PC and compatibles). "Integrated" in this case means that sophisticated graphic charting and simple database management funcitons are part of the package. *VIP* uses many features of the "Macintosh user interface" including pull-down menus, scroll boxes, and icons. Every function that can be performed with the mouse is duplicated in keyboard commands.

There are two editions of the program: A ProDOS 8 version for the IIc and enhanced IIe requiring 256K, and a ProDOS 16 version for the IIGS requiring 512K. In both cases, the memory must be in the auxiliary slot, which is directly addressable by the microprocessor. This essentially rules out using the program on a II, Franklin or Laser.

VIP is a huge program—over 200K of machine code that loads itself completely into RAM. The ProDOS 8 version is supplied on two 5¼" disks, using all four sides: a boot disk, program overlays, sample files and utilities. The screen display initially shows fourteen rows and ten columns. This is only a small window into a huge work area

Service Diagnostics: The KIT
SuperSoft
SERVICE DIAGNOSTICS

SuperSoft announces **Service Diagnostics: The KIT.** All the software, alignment diskettes, parallel/serial wrap-around plugs and extensive, professional documentation to provide the most comprehensive testing available for IBM PCs, XTs, ATs and *all compatibles under DOS or Stand Alone.* No other diagnostics offers such in-depth testing on as many different types of equipment by isolating problems to the board and chip level.

For over eight years, major manufacturers have been relying on SuperSoft's diagnostics software to help them and their customers repair microcomputers. End users have been relying on SuperSoft's Diagnostics II for the most thorough hardware error isolation available. Now versions of Service Diagnostics are available to save everyone (including every serious repair technician) time, money, and headaches in fixing their computers, even non-IBM equipment.

All CPUs & Numeric Co-processors
System Expansion & Extended Memory
Parallel & Serial Ports
Mono, CGA, Hercules & EGA Adapters
All Keyboards & the 8042 Controller
All Color Graphics & Monochrome Monitors
Floppy, Fixed & Non-standard Disk Drives
Standard & Non-standard Printers
System Board: DMA, Timers, Interrupt, Real-time Clock & CMOS config. RAM

Join the ranks of XEROX, NCR, CDC, SONY and PRIME who have bundled SuperSoft diagnostics with their microcomputers at no risk because of our 30 day money back guarantee.

Service Diagnostics for PC, PC/XT, and compatibles only	$195
Alignment Diskette for PC, PC/XT and compatibles (48 tpi drives)	$40
Wrap-around Plug for PC, PC/XT and compatibles (parallel and serial)	$30
Service Diagnostics for AT and compatibles only	$195
Alignment Diskette for AT and compatibles (96 tpi drives)	$50
Wrap-around Plug for AT (serial)	$15
Service Diagnostics: The KIT (includes all of the above—save $30)	**$495**
Service Diagnostics for all other CPUs (386, V20, V30, Harris, etc.)	$195
Diagnostics II is the solution to the service problems of users of *all* CP/M-80, CP/M-86 and MS-DOS computers	$125
Alignment Diskette for PS/2 and compatibles (3.5 inch)	$40

To order, call 800-762-6629 (in Illinois 217-359-2112), fax 217-398-5923, or write SuperSoft. (Please specify DOS or Stand Alone.)

SuperSoft®

FIRST IN SOFTWARE TECHNOLOGY P.O.Box 1628 Champaign, IL 61820 (217) 359-2112 Telex 270365

SUPERSOFT is a registered trademark of SuperSoft, Inc. CDC of Control Data Corp. Dysan of Dysan Corp. IBM PC, AT & XT of International Business Machines Corp. MS DOS of MicroSoft Corp. NEC of NEC Information Systems Inc. PRIME of PRIME INC. Sony of Sony Corp.; and Xerox of Xerox Corp. CPM-80 & CP/M-86 are the trademarks of Digital Research, Inc

DATRON and DATAFRAME

Mass Storage for Macintosh (SCSI)

SUPERMAC TECHNOLOGY
MACINTOSH ENHANCEMENT PRODUCTS

XP 105
XP 60+B
- 60 MB with 20 MB BERNOULLI

XP-150
XP 60 + 40
- 60 MB HARD DISK/TAPE BACKUP SYSTEM

CALL FOR PRICING

XP 60 $1375

XP 30 $935

ALSO AVAILABLE: Memory Upgrade Products, Video Products, Monitors, Cables & Accessories

MultiTech Systems

"Editor's Choice"
PC Magazine—May 12, 1987 Issue

2400 Baud External Modem with CLASS 5 Error Correction Now $450.

NEW!! 1200 Baud Toshiba 1100/3100 Internal Modem ....Now $230.

—Ask About Our FULL LINE of Modems & Statistical Multiplexers—

CALL for Prices on Our COMPLETE LINE of Peripheral Products & Computer Media Supplies

DATRON PERIPHERALS
17151 Newhope Street, Suite 112, Fountain Valley, CA 92708
714-540-6066

mission SYSTEMS

AT 286 • 512K Ram
BTC 5339 Keyboard
220 Watt Power Supply
FDD/HDD Controller
1.2 MB Floppy

6/10 Mhz ...**$935**
8/12 Mhz ...**$990**
6/10 Mhz/20 MB Mono.........**$1274**

MISSIONMacMEMORY
Mac SE & Mac II UPGRADE
1 MEG X8 DRAM SIMMS
$224 ea. (Limited Quantity)

WELTEC digital MODEMS
(CABLE & SOFTWARE INCLUDED)
300/1200 ½ Card Internal $79
300/1200 External $95
Mac 300/1200 External $98

CTX 14" COLOR MONITORS
2 YEAR WARRANTY
1422 EGA (720 x 350 .31 Dot) $339
1410 RGB (16 Color, Green/Amber) $239
EGA & CARD COMBO (CTX 1412) $435

Viking Computer Products
HARD DRIVE CARDS

68 MS ACCESS		40 MS ACCESS	
20 MB	$345	20 MB	$410
30 MB	$359	30 MB	$425

mission p.c. connection
(714) 581-9639
FAX: 714-768-7306
27758 Santa Margarita Pkwy., Suite 301, Mission Viejo, CA 92691
Calif. Residents add 6% Shipping & Handling
All Trademarks Acknowledged

of 8,192 rows by 256 columns. For comparison, the (unmodified) *AppleWorks* spreadsheet is 999 rows by 153 columns.

Built into *VIP* are 34 math and logic functions, five financial functions, seven database functions and five calendrical functions. These are all identical to features of *Lotus 1-2-3*. *VIP* also supports keyboard macros, which are combinations of entries and commands that can be composed in advance, named and stored as part of the worksheet, and executed with a few keystrokes. *Lotus 1-2-3* macros are virtually a programming language, capable of automating repetitive tasks and performing very complex functions. Most Lotus macros will work in *VIP*; some require patching due to differences in file structure and keyboard layout.

VIP requires a considerable investment in hardware for optimal performance. In addition to the expanded RAM, 8-bit Apples should have a Transwarp accelerator card (from Applied Engineering). A RAM Disk card would be helpful, as would a hard disk or Unidisk. The mouse is optional, and most IBM PC users making the transition to *VIP* would probably prefer to do without it. *VIP* does not support digital RGB video—if it detects an RGB card it automatically switches to monochrome. A high-resolution green or amber monitor is preferable. Since the entire screen is treated as a bit-mapped display, the legibility of text is marginal, but the graphics look very clear.

The ProDOS 16 version for the Apple IIGS is a much better value. The IIGS version supports graphics in up to eight colors (and these graphics can be printed out on an Imagewriter II with the color ribbon). The program should not be loaded from the horrible IIGS Program Launcher—this wastes 34K of RAM, which significantly decreases the size of the spreadsheet you can build on a 512K system. The publisher strongly recommends a full megabyte of RAM for serious users. *VIP* does not work with the RAM Disk created by the IIGS Control Panel; it has its own memory manager that will automatically utilize any RAM above the 512K minimum.

Both versions of *VIP* use the same 261-page spiral bound manual, which is well illustrated with screen shots, and very slow and heavy reading. Any of the many excellent introductory *Lotus 1-2-3* books would be better for a beginner, as long as you ignore everything about MS-DOS directories. Differences between the IIe and IIGS versions are covered in a 10 page pamphlet. A good understanding of ProDOS pathnames is an absolute prerequisite to using this product.

The publisher, ISD Marketing in Ontario, Canada, provides a technical support phone (not toll-free) to registered users for six months from the date of purchase. This can be extended for an annual fee.

In its documentation, *VIP* modestly claims to be "the best and most powerful spreadsheet for any commputer, bar none. This means. . .better than *Lotus 1-2-3* on the IBM and better than *Excel* on the Macintosh." This claim is somewhat overstated. On very large spreadsheet recalculations, reviewers have reported that the program slows down to a crawl.

At a list price of $250 ($300 for the IIGS version) *VIP* is well beyond the means of the average Apple home user. This is a high powered spreadsheet for the financial analyst or scientist who might work on an IBM PC environment, but is unwilling to give up a beloved Apple. Users who need presentation graphics would find *VIP Professional* especially valuable. Applied Engineering offers an attractive discount when the program is bundled with one of their boards. Versions for the Amiga and the Atari ST are also available. By not competing in the IBM PC arena, the publishers have been able, so far, to avoid legal hassles with Lotus. (ISD Marketing, Inc. 2651 John St., Unit #3, Markham, Ontario, Canada L3R 2W5. (416) 479-1991.)

DISCOVER **DIS**KETTES **DIS**COUNT.

33¢
WHITE BOX

Packaged 10 Disks in a plain white box and include the following:

- Sleeves
- Labels
- Hub rings
- 100% Error-free
- Lifetime Warranty
- ★ White Box with Tyvek sleeves **35¢** each color coded labels and tabs included.

26¢
BULK

- Bulk Diskettes come with hub rings and write protect tabs, packaged in poly bags.

Add the following extas:

- 2¢ Paper sleeves

OR

- 4¢ Tyvek sleeves
- 2¢ labels & tabs

44¢
COLOR

Including sleeves, labels & tabs.
Light Blue, White, Lavendar, Gray, Red, Brown, Green, Yellow, Burgandy, Blue, Rainbow Pack

100% ERROR FREE • LIFETIME WARRANTY

U.S. MAJOR MANUFACTURER

99¢

5.25 H.D. (1.2 MB)
3.50 Single Side
3.50 Double Sided

Add $3.00 shipping per 100 Disks. CA residents add sales tax. For orders call or send check to:

For orders call or send check to:

PILLARCO INC.

1633 Westwood Blvd., #120,
Los Angeles, CA 90024 213/477-5442

For Hardware and Software inquiries please call our Beverly Hills location.

Labels and Printer Ribbons	
Computer Paper 9 1/2" x 11" 2500 Sheets	$17.99
Computer Paper 14 7/8" x 11" 3000 Sheets	$29.99
Computer Cables (Parallel, Serial, etc.)	$7.99
Power Surge Control (UL)	$8.99
AC Power Pad (Master Pad)	$24.99
5 1/4" Diskholder holds over 175 diskettes	$15.99
5 1/4" Diskholder holds over 120 diskettes	$10.99
5 1/4" Diskholder holds over 100 diskettes	$8.99
5 1/4" Diskholder holds over 50 diskettes	$7.99
5 1/4" Smokey Deluxe Library Case 10 disks	$1.49
5 1/4" DS/HD Dysan box of 10 disks	$18.00
5 1/4" DS/HD Datatech box of 10 disks	$12.99
3 1/2" DS/DD Sony box of 10 disks	$16.99
3 1/2" DS/DD Datatech box of 10 disks	$13.99
3 1/2" Diskholder holds over 80 diskettes	$10.99
3 1/2" Diskholder holds over 50 diskettes	$9.99
3 1/2" Diskholder holds over 25 diskettes	$4.99
3 1/2" Deluxe Library Case holds 20 disks	$9.99
3 1/2" Smokey Deluxe Library Case 10 disks	$1.49
5 1/4" Head Cleaning Kit for diskdrives	$5.99
3 1/2" Head Cleaning Kit for diskdrives	$5.99
Keyboard Drawer (Wooden or Gray Metal)	$37.00
5 1/4" DS/DD Dysan box of 10 disks	$9.99
5 1/4" DS/DD Precision box of 10 disks	$4.99
5 1/4" DS/DD Maxell hardbox of 10 disks	$10.99
5 1/4" DS/DD Bonus box of 10 disks	$5.99
5 1/4" DS/DD Memorex box of 10 disks	$5.99

Distributor of these fine products.

SONY® Dysan® Verbatim®

2nd Location:

GRAND OPENING SPECIAL

12MHz Compatible Computer
w/ 40MB Hard Disk (Industry's Highest Standard)
and a STAR PRINTER

for only **$1299**

213/275-2200
179 S. Beverly Dr.
Beverly Hills

2 hrs Free Parking

HOME MANAGEMENT

On Balance

By: *David Eisler*
Published by: *Brøderbund (1986)*
For: *Apple II series (128K)*
List Price: *$99.95*
Reviewed by: *Mike Markowitz*

The irony of home accounting programs is that the people who need them most are the least likely to use them. By temperament and inclination, people like us are unwilling to spend time adding and subtracting dollar amounts in little notebooks.

I can't be out of money; I still have checks!

On Balance represents a clever attempt to trick lazy users into responsible accounting by making the software fun to use. It is one of the best Apple II emulations of the Macintosh user interface to appear since *Mouse Desk*. The program requires an Apple IIe with 128K and extended 80-column card, or a IIc or IIGS. It ran without problems on the Laser 128.

There is virtually no setup time required. Brøderbund claims that you can be using the program in under ten minutes. The screen starts as a clean white sheet of paper. There is a menu bar with six pull-down menus: File, Transactions, Accounts, Reports, Goodies, or Customize.

Everything that can be done with the mouse can also be done from the keyboard, with twenty-seven different open-apple key combinations. Help is always available with a mouse-click or keystroke. A pop-up calculator and notepad are provided as "desk accessories." This sort of thing may be easy on the Macintosh, but in the Apple II environment it is a real programming tour-de-force.

On Balance
USER'S GUIDE

On Balance is a personal finance package that works the way people think.

Transactions are recorded in much the same way that you would fill out a checkbook record. You enter the day, the check number, or a letter code that identifies the type of transaction, the payee (up to 20 characters), major and minor accounts, and, of course, the amount. Major accounts are things like Assets, Liabilities, Income, Expenses, and Miscellaneous. Minor accounts are anything you want, like Groceries, Insurance or Bribes.

The remarkable thing about *On Balance* is that it can create accounts "on the fly" as you enter transactions. Up to 175 different accounts can be created, and the names or types of accounts can easily be changed. You do not have the daunting task of designing an entire financial system before you can enter a single transaction.

The program is smart enough to know whether a given type of transaction should be added or subtracted from the account balance, so you need not worry about + and − signs.

You can record up to 800 transactions a month. Each year of records requires its own data disk. You can search the data by date, by check number, by payee, by dollar amount, or by any text string. *On Balance* data can be easily converted into Appleworks' spreadsheet format, using an "export utility" provided on a separate disk.

The program can be set up to prompt you when regular payments are due, and it can even print checks. The documentation is first-rate, but no program manual can substitute for training in bookkeeping, the tax laws, or common sense. The 110-page spiral-bound manual includes a short chapter on "Principles of Home Finance" that defines such esoteric terms as Net Work and Net Income. The manual provides examples of how to enter various kinds of transactions, as a complete description of every command, option and report.

Early versions of *On Balance* were copy protected. On May 15, 1987 Brøderbund began shipping the program without copy protection. According to Nanci Buck (that's her real name!), marketing manager for the product, "We are finding that users are becoming very dependent on the fast, easy way *On Balance* helps them manage their finances: so much so, in fact, that their concerns about disk failures or possible delays in back-up disk fulfillment have prompted us to reconsider our protection policy..." Registered own-

Factory Direct Prices . . .

Attn: End Users
We will meet or beat
ANY price on
any computer system
in this magazine.

XT Turbo
$549

- Monitor
- 4.77/8 MHz
- 640K on motherboard/8 slots
- 2 360K Floppies w/Card
- 150 Watt Power Supply
- Parallel port
- AT Style Keyboard
- Video Graphics Card
- 1 Yr. Warranty (Parts & labor)

Color: $735 EGA: CALL

SUPER
CHRISTMAS
SPECIAL
COMPLETE BEGINNERS TURBO SYSTEM
INCLUDING
HIGH RESOLUTION MONITOR &
STAR NP-10 PRINTER
With Full One Year Warranty On Parts And Labor
only $575

Options To XT & AT:

20 MB Seagate ST 225 Hard Disk w/controller	$330
30 MB Seagate ST 238 Hard Disk w/controller	370
Hi Res Color RGB Monitor	235
EGA Monitor w/card	from 525
Int. 1200 B Modem	100
LogiMouse	100
Printers (various brands)	from 159

Laser Products • Print Ribbons • Computer Paper • Labels • Business Forms • Checks • Letterhead

Desktop Publishing
Buy from the experts who know!

VENTURA PUBLISHER (Vers. 1.1)	$499
Pagemaker	525
HP Laserjet Series II (incl. toner)	1800
5¼" Diskettes DS/DD (includes sleeves & labels)	40¢ ea
3.5" Diskettes DS/DD	1.25 ea

Computer
Supplies
Unlimited
Serving You Since 1983
(714) 841-3393

17931 Beach Blvd. Ste. 110
Huntington Beach, CA 92647
Near NW Corner Beach & Talbert
Look for our sign: COMPUTERS

Hours: M-F 8AM-6PM
SAT 9AM-5PM
OTHER HOURS BY
APPOINTMENT

STOP BY OUR STORE OR CALL FOR UPS DELIVERY.
UPS IS OVERNIGHT IN O.C. AREA.
Prices and availability subject to change without notice.
Prices reflect 3% cash discount.

You Can Whisper About How Good This Printer Is.

That's because Toshiba's P321SL Printer will raise your productivity, not your voice. It has a selective quiet mode and standard features you will rave, but not yell about. Taking full advantage of a 24 × 42 character matrix that's unequaled in the industry, other 24-pin printers, (not to mention any 9-pin relatives), will have to play follow the leader.

Toshiba built it because you asked for it.

"MAKE IT EASIER TO USE." Say goodbye to the DIP switches in your life with front panel selection of type fonts, pitch, emulation, quiet mode and more.

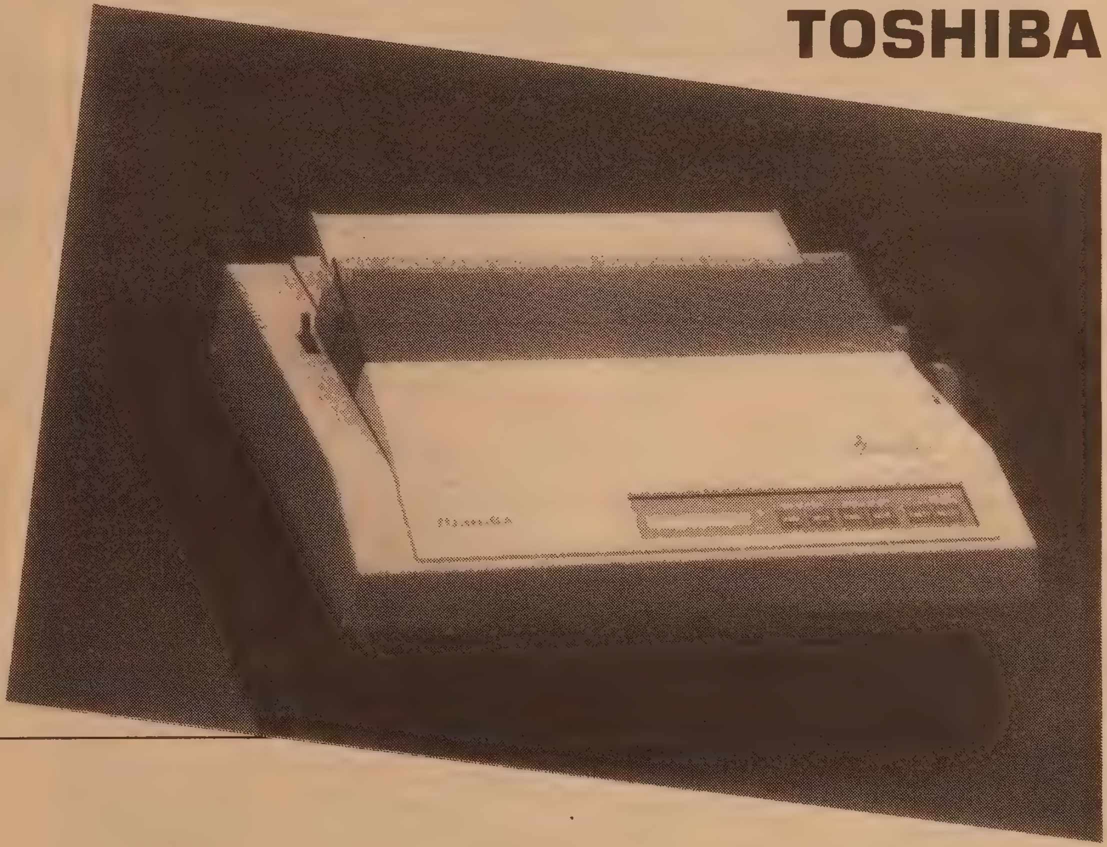
"BE SURE IT HANDLES LOTS OF SOFTWARE." The P321SL handles practically any software, so you won't have to pay extra for exotic print drives. With a finger-tip you can choose from three standard emulations: IBM PROPRINTER, QUME SPRINT 11 or TOSHIBA P351. You can create truly unique text with the selection of five resident fonts, two more via the front leading card slot and two more from disk.

"PROVIDE ENHANCED PAPER HANDLING." Forget about paper changing hassles. The fan-fold bypass feature lets you feed single sheets without pulling out the continuous form paper. Plus, with the auto-load lever you can position either type of paper quickly and precisely.

"KEEP IT AFFORDABLE." For slightly more than a 9-pin model, you can enjoy the printer you've designed yourself. The P321SL retails for $749.

"GIVE IT ATTRACTIVE STYLING." At a streamlined 16.3"W × 3.9"H × 15"D and only 17 lbs., it's the heavyweight champ pound for pound. You get great graphics with resolution as high as 180 × 360 DPI. It can also use compressed print so you can put 132-column spreadsheets on convenient letterhead size paper. Toshiba is where standard features set industry standards. Consult your nearest dealer listed below to get your printer today.

TOSHIBA



Now the printer that you designed is ready at one of the dealers listed below!

ASUCLA Computer Store
308 Westwood Plaza
Los Angeles, CA 90024
213 825-6952

Microcomputer Concepts
5921 Clark Circle
Westminster, CA 92663
714 898-3002

Americomp
114 E. Balboa Blvd., #A
Balboa, CA 92661
714 675-6664

Monarch Micro Systems
12852 Palm St., #308
Garden Grove, CA 92640
714 530-1880

NR Systems
8363 Reseda Blvd., #14
Northridge, CA 91324
818 349-9898

National Computer Specialists
6153 Fairmount Ave., #102
San Diego, CA 92120
619-584-2700

Infotech International
8210 Katella Ave.
Stanton, CA 90680
714 894-0826

MCG Enterprises
20252 Clear River Lane
Yorba Linda, CA 92686
714 970-1214

Priority One Electronics
21622 Plummer St.
Chatsworth, CA 91311
818 709-5464

BROUGHT TO YOU BY
Gates
DISTRIBUTING

ACER
TAKE A LESSON IN MICRO ECONOMICS.

OTHER ACER PRODUCTS

ACER 1100 (386, 40MB, 16MHz, 1 MB)	$3495
ACER 900 (286, 40MB, 10MHz, 640K, mono mon)	2495
ACER 910 (286, 40MB, 640K, mono mon)	1995
ACER 710 (8088-2, 40MB, 4.77 & 10MHz, 640K)	1750
Comco 2400 PC Modem (Hayes Compatible)	275
Serial/Parallel Card	85
Monochrome Graphics Card	95
Color Graphics Card	105

Ol' Reliable - COMPAQ

Compaq Deskpro 1 drive, 40MB harddisk	$1695
Compaq Deskpro 20MB, 640K, mono mon	1950
Compaq Deskpro 286 12MHz	start at 1895
Compaq Portable Model III 20MB/40MB	3700/4400
Acer 386 - See & Compare	3495
Compaq 386 w/40MB HD	4845
Compaq 386 w/70MB HD	5445
Compaq 386 w/130MB HD	6645

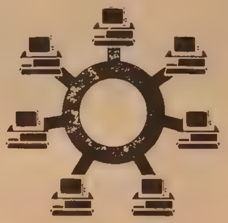
UPGRADE SPECIALS

Maxtor 40MB	499 (installed)
Miniscribe 53MB (28m/s acc. Time)	699 (installed)
Seagate 20MB ST225 (85m/s)	325
Seagate 30MB ST4038 (34m/s)	525
Priam 63MB HD (formatted)	995
Intel Math Co-Processors (in Stock)	CALL
NEC Multisync Monitor	545
THOMPSON EGA Monitor	525
Paradise 480 Card	299

Look for ACER Technologies Corporation, a company with a broad line of products that meet all your needs. A company that's been delivering top quality products for at least 10 years. ACER offers exceptional quality and reliability and gives you more features and performance. Including a strong nationwide support program. All this for less money. In a word, it all adds up to value.

Authorized ACER reseller. ACER is a trademark of Acer Technologies Corporation.
Formerly marketed as Multitech Electronics, Inc.

WE DO NOVELL NETWORKS



Let your office PC's share information and expensive peripherals.

NOVELL

NetWare

NETWORKING PC'S IS ECONOMICAL CONSIDER IT!

Ideal for small office environments including:
Dental & Law Offices.
(Large Multi-User Systems Available)

Free Evaluation Make your appointment now

TOSHIBA PRODUCTS

T3100 Plasma Laptop w/20 MB HD	3295
NEW Toshiba 1000	1150
Modem & External 5 1/4 Drive Available	
351 Model II	985
341SL (Tractor built in)	725
321SL (Tractor built in)	575

CITIZEN

Citizen Premiere 35 (daisy wheel)	495
Citizen Tribute 224 (24 pin) w/cable	625
Citizen MSP-15 (9 pin) w/cable	385
Citizen MSP-10 (9 pin)	285

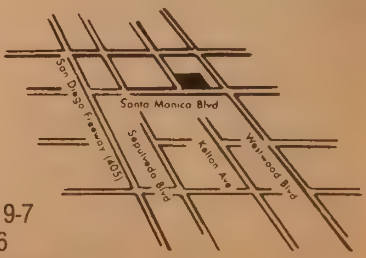
NOW
NOVELL AUTHORIZED
Corporate Accounts Available
Corporate & Quantity Discount available

YES! We carry IBM PC/XT/AT

WE SERVICE ALL MAKES AND MODELS

HOUSE OF COMPUTERS INC
10929 SANTA MONICA BOULEVARD • LOS ANGELES • CALIFORNIA 90025

(213) 479-7745

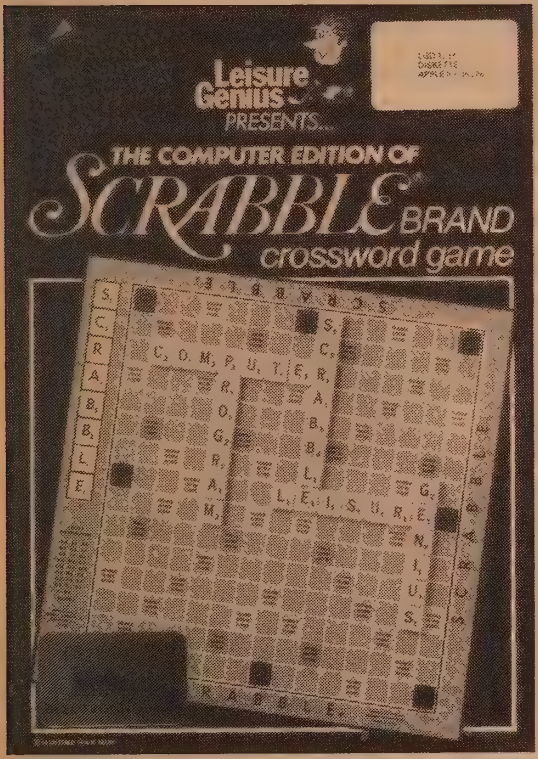


Hours: M-Th 9-7
Fri 9-6
Sat Noon - 5pm

ers will be able to upgrade to the unprotected version at no additional charge. At the same time, Brøderbund will start packaging both 5¼" and 3½" disks in the same box, as a convenience for Unidisk users.

On Balance is probably the best personal finance software ever created. It is designed for the way people really think and work, not the highly organized, disciplined way accountants would prefer. It would be particularly suitable for Apple users who run a small business out of their homes (as long as there are less than 800 transactions a month). The cost is rather high for personal software, but not unreasonable considering the potential value of the product. (Brøderbund, 17 Paul Drive, San Rafael, CA 94903-2101. (415) 479-1185).

GAMES



Now available for a variety of machines, the computer edition of Scrabble offers plenty of challenge for the word gamer.

The Computer Edition Of Scrabble

Published by: *Leisure Genius*
Distributed By: *Electronic Arts*
For: *Commodore 64 (revised), Macintosh, IBM*
List Price: *$34.95*
Reviewed by: *Sue Albert*

Few of us are unfamiliar with the board game *Scrabble*. Since 1948 it has entertained several generations and become a classic. Now a computer version puts some elctronic zip into this golden oldie without compromising the original. The only things I miss are the click and feel of lovely wood titles.

For those of you that somehow missed afternoons hunched over the dining room table with a dictionary on your knees, *Scrabble* is a crossword puzzle game. Players form words from alphabet tiles, with higher values given to less frequently used letters. Points are scored by placing your tiles so they make the most use of letters from previous words. You can use any dictionary words except proper names, foreign words, abbreviations or words with hyphens or apostrophes. Extra points are given when tiles form more than one word, and some board squares double or triple the points for a letter or a word. Several blank tiles act as "wild cards." The game is over when all the

WE STOCK THESE COMPLETE LINES
IF YOU DON'T SEE IT, CALL US!
1-800-356-7401
(1-800-FLORI-01)

PRINTERS

ALPS

P2000	250 cps	$719
P2000	Image Enhancer Card	389
P2100	400 cps, 18 pin	1159
P2418C	360 cps, Color Printer	939
P2424C	360 cps, Color Printer	1009
ALQ218	240 cps, 18 pin	429
ALQ224	240 cps, 24 pin	499
ALQ318	240 cps, 18 pin	649
ALQ324	240 cps, 24 pin	699

CITIZEN

120D	120 cps	$154
MSP-10	160 cps	272
MSP-15	160 cps	349
MSP-20	200 cps	312
MSP-25	200 cps	439
MSP-50	300 cps	379
MSP-55	300 cps	489
TRIBUTE 124	200 cps, 24 pin	489
TRIBUTE 224	200 cps, 24 pin	669
PREMIERE 35	350 Daisy	459
OVERTURE 110	Laser Printer	1499

DICONIX

150P	Ink Jet, Parallel	$329
150S	Ink Jet, Serial	329

Panasonic

KX-P1080IM2	144 cps	$179
KX-P1091IM2	192 cps	199
KX-P1092I	240 cps	329
KX-P1524	240 cps, 24 pin	589
KX-P1592	180 cps	425
KX-P1595	240 cps	459
KX-P3131	17 cps Daisy Wheel	279
KX-P3151	22 cps Daisy Wheel	439

Personal Computer Products, Inc.

LI1000	Laser Printer	$1799
L2000-PLUS	Laser Printer	2899
L3000-PLUS	Laser Printer	4899

star

NB15	300 cps, 24 pin	$799
NB24-10	216 cps, 24 pin	489
NB24-15	216 cps, 24 pin	639
ND10	180 cps	289
ND15	180 cps	419
NP10	100 cps	155
NR15	240 cps	489
NX10	120 cps	179
NX15	120 cps	329

FAX BOARDS

Panasonic FX-BM83 (Bus. Partner)	$689
Panasonic FX-BM89 (IBM)	689

DATAFOX ™
A family of quality computers for the serious user.
- Nationwide Service
- XT and AT Compatible Computers
- Monitors and Modems
- New Small Footprint AT and 386

CALL FOR PRICE

MONITORS

MAGNAVOX

7BM613	12"	TTL Green	$89
7BM623	12"	TTL Amber	89
8CM515	14"	CGA	309
8CM540	14"	EGA	449
8CM643	14"	CGA	389
8CM873	14"	Multiscan	569
BM7622	12"	Amber Composite	85
BM7652	12"	Green Composite	85
CM8562	13"	RGB	289

DATAFOX

12-TTL-GR1	12"	TTL Green	CALL
12-TTL-AM1	12"	TTL Amber	CALL

Panasonic TR-125M9T TTL Green 89

TAPE BACKUPS

InterDyne

PT-20251	20MB Internal	$1359
PT-201—AT or XT	20MB Internal	639
PT-T60E	60MB External	1079
PT-T60I	60MB Internal	839

BLOWOUT!
ADS ACCOUNTING SOFTWARE
Payroll, Accounts Payable, Inventory, General Ledger, & Accounts Receivable
$199 Each!!
All other modules, CALL!
Suggested Retail: $485

TECMAR

QT-125I	125MB Internal Tape	$1275
QT-125E	125MB External Tape	1685
Q-60W20	60MB Tape, 20MB HDD	2345
Other Models Available		CALL

PARADISE, EFI, VERBATIM, & PRACTICAL PERIPHERALS, CALL!

1200 BAUD INT MODEM $89
From Computer Peripherals

HARD DISK DRIVES AND CONTROLLERS

MiniScribe

3053	44MB, 25MS	$629
3425	21MB, 85MS	239
3438	31MB, 85MS	259
3650	41MB, 61MS	319
6032	28MB, 28MS	579
6053	44MB, 28MS	609
6085	71MB, 28MS	819
8425	20MB, 68MS	289
8438	32MB, 68MS	299

WESTERN DIGITAL

WD-20 IFC 20MB Filecard	$549
WD-1002-WX1	65
WD-1002-27X	72
WD-1003-WAH	124
WD-1003-WA2	129
WD-1003-RAH	169
WD-1003-RA2	189
Other Models Available	CALL

All orders shipped within 24 hours. Next-Day-Air available. Allow two weeks for checks to clear. For faster delivery use Visa, MasterCard, cashier's check or money order. Add 3% for credit card orders. Freight added to invoice. Your card will not be charged until we ship. No sales tax outside Arizona. Prices and policies subject to change without notice. Orders subject to availability.

FLORI \ DIRECT
205 S. 29th St., Phoenix, AZ 85034
A DIVISION OF FLORI CORPORATION
OUR 27th YEAR IN BUSINESS
$2 MILLION IN INVENTORY

All products carry factory warranty. We cannot guarantee compatibility. Defective hardware replaced or repaired at our discretion. All sales are final. Returned shipments subject to 15% restocking fee. Returned product must be in original packaging with warranty cards and manuals intact and carry an RA#. No credit issued after 30 days from shipment.

LOOK !
AT STYLE
CASE
10 MHz

SAECO

IBM PC/XT COMPATIBLE
ALL COMPLETE WITH
HARD DRIVE AND
TTL AMBER MONITOR
30MB $995
$30. per month

• Turbo Speed 4.77/10 MHZ • 16-bit 8088-2 Processor • 640K Mb On Board • 8087 Co-Processor Socket • Eight Expansion Slots • 150-Watt Power Supply • Front Panel Turbo/Power/HD Lights • Can Boot-up in Turbo Mode • Unique, Heavy-Duty AT Style Case • Runs all MS-DOS programs including 1-2-3, Flight Simulator, etc. and GW BASIC • Brand New (Not Rebuilt) Famous Brand Hard Drive and Controller Card • System Boots From Hard Drive • 360K Direct Drive (Not Belt Driven) Famous Brand Floppy Drive • Four-Drive (Not 2-Drive) Floppy Controller • AT-Style Keyboard, 84 Keys, LED Indicators and Large Return Key •Monographics (Hercules Compatible) Card W/Printer Port • High Resolution TTL Amber Screen Monitor •System Assembled and Diagnostic Tested in our Labs.

IBM AT COMPATIBLE/40MB. Call for our LOW PRICES
ALL ITEMS FULL ONE YEAR WARRANTY PARTS AND LABOR

SAECO
1122 E. CHEVY CHASE DR.
GLENDALE, CA 91205
(213) 245-7708

FREE CONSULTATION!

IBM XT, AT is a trademark of International Business Machines

tiles are used or no new words can be formed. The manual gives a clear explanation of all rules before proceeding with loading and computer play instructions.

Computer Scrabble is played exactly the same way, with only minor accomodations for the board being on a video monitor. The board takes up three quarters of the screen alongside a narrow scoreboard containing the players names, running scores, a status box, and a keyed-in option window. Up to four may participate. The computer can play one player, or for an automated game, all the challengers.

The computer can play at levels 1-8. Unfortunately I have only one level. An adolescent whiz, I found the brain cell loss of middle-age all too evident when I challenged the computer at higher levels. This game can keep you on your toes. One innovation is that you have a choice of watching the computer opponent "think" and try out different possibilities before placing its tiles. I was gratified to find it took slightly more time "thinking" as the game got tougher.

Scrabble uses the computer to advantage in the options. Built in it is a 20,000 word dictionary, but if the computer challenges your word, you may bypass with a keystroke. The honor system or your opponent should keep you straight. For serious competitors there is a time clock available. You may, by forfeiting your turn, change one or all your tiles. If inspiration fails you just "juggle" the tiles. The computer will even give you a hint if you are at a dead loss. Tile or board values are visible from "Options." If you are interrupted, you may save the game to disk and resume it later.

There are no print functions in *Scrabble*. The program seems solid and bug free, and I could only wish the board colors could be altered to lessen eye strain. I must warn users having a Cardo +G Printer Interface that it must be disconnected to get the disk to properly load.

So forget the dining room table, sit you down at the keyboard and spend a long afternoon with a game that lets you painlessly hone your spelling and vocabulary while having a rousing good time.

SANWA
COMPUTER
FURNITURE
MAJOR SALE ON NOW!
It's scratch-proof, portable, a space saver, and it easily assembles from knockdown parts.

PCT 4000
- Suitable for IBM Compatibles
- CPU and Keyboard enclosed with elegant tambour board door with lock
- Dimensions: 28½" x 26" x 34"

$79

PCT 2000
- Suitable for IBM Compatibles
- Slide-in keyboard tray
- Pull-out side tray for 80-column printer
- Dimensions: 27¾" x 26" x 29¾"

$69 retail price
Call for dealer price

CPT 100/200
- Suitable for most types of 80-column or 132-column printers
- Dimensions:
  CPT 100: 14" x 20½" x 24¼"
  CPT 200: 16½" x 27⅞" x 26"

CPT 100 — $40
CPT 200 — $49

MELAWARES INTERNATIONAL CORP.
UCR™ Business Centers
United Computer Resources
1301 A.W. Gaylord Ave.
Long Beach, CA 90813
(213) 491-0640
(213) 436-8515
(213) 436-8610
FAX: (213) 436-4477

Shanghai

Designed by: *Brodie Lockard*
Published by: *Activision (1986)*
For: *Apple IIGS (512K)*
List Price: *$44.95*
Reviewed by: *Mike Markowitz*

The origins of Mah-Jongg are obscure. Some say it was invented by Chinese sailors and fishermen to pass the time on long sea voyages. In the 1920's it enjoyed tremendous popularity among the fashionable and decadent. By the 1950's it had dwindled to a quaint pastime of a few women's clubs.

It is an exotic, almost sensual game, with its great piles of brightly painted, engraved ivory tiles that make a distinctive click as they are slapped down on the table. The rules of play are extraordinarily simple, but the scoring system is dismayingly complex, under both the Chinese and American rules. Large sums have traditionally been staked on Mah-Jongg games; Americans and Chinese both love to gamble.

In developing a version of this ancient game for the computer, Brodie Lockard has kept the bright, exotic feel and dropped all of the complexity. The result is an "addictive" game called *Shanghai* that combines elements of chance and skill in a particularly pleasant way.

In adopting a Macintosh version for the Apple IIGS Ivan and Carol Manley took a significant risk, with a shaky, prototype operating system and a new computer, of unproven market potential. Rather than limit the resolution of the graphics, the developers decided to require 512K of RAM (the Apple IIGS is sold with only 256K on the motherboard). The gamble has paid off.

After opening with a super high-resolution picture of a red-lit opium den (which probably occupies more disk space than most entire games for the 8-bit Apple), the game builds a stack of 144 colored tiles on the screen. This is called the "dragon" and follows a precise pattern, although the position of the individual tiles is randomized for every game. There is a graphic 3-dimensional perspective that gives the player a clear impression of the arrangement of the stack.

The object of the game is to remove pairs of matching tiles. There are three suits of tiles—dots, bams and craks—numbered from 1 to 9 with four of each number. There are also 12 dragon tiles, 16 winds, 4 seasons and 4 flowers. A tile may only be removed if it is not blocked ot the left or right. You may select a tile by clicking on it with the mouse. You can double click on the second tile to remove it immediately, or you can make your move more deliberately, by clicking on a button that pops up when the second member of a pair is selected. Some games cannot be played to completion, since critical sets of matching tiles may be "buried" underneath one another. Tough luck.

The game will not let you make an error. There is a full set of pull-down menus, providing options to save a game in progress, establish time limits, revise the rules, get help or toggle the sound.

Although *Shanghai* plays smoothly enough, it is not immune from the bugs that seem to plague the first generation of 16-bit software for the Apple IIGS. On some early copies, when you win, the program tries to load a congratulatory screen, but crashes into the monitor, after flashing a forlorn "picture load error—please contact Activision" message. Activision provided a simple patch that

PC PORT CONTROLLER

PORT 0
PORT 1
PORT 2
PORT 3
PORT 4
PORT 5
PORT 6
PORT 7
PORT 8
PORT 9

©1986 CSI ALL RIGHTS RESERVED

Applications

- Inexpensive **local area network.**
- Printer buffering and sharing by multiple hosts.
- Host buffering and sharing for multiple printers.
- Local RS232C/RS422 data concentrator with programmable controller functions.
- Timed dial-up and message transfer with stand-alone modem.
- Point-of-Sale (POS) network systems.
- Electronic mail systems.

System Features

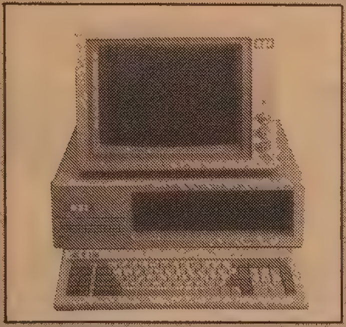
- Ten asynchronous RS232C/RS422 ports.
- 192K bytes of buffer memory.
- Resident **FORTH** or basic control language (Up to 7 screens of **FORTH** may be stored in changeable non-volatile memory) (BASIC-FALL '86).
- Host programmable port set-ups stored in non-volatile memory.
- Port reprogrammable transfer destination by embedded character protocol.
- Remote (modem) factory custom programmable.
- **Real-time** calendar clock for time and date stamping of messages.
- Any port to any port data concentrators.

COMPONENT SYSTEMS INC.

778-A Brannan Street
San Francisco, CA 94103
Telephone (415) 861-1345

CSI

Manufacturer's Direct



ASI-100E SERIES
Enhanced 16-Bit Personal Computer

ASI-100E — \$259
8088 4.77 MHz, 256K RAM (EXPANDABLE TO 640K), 8 SLOTS, "AT" STYLE KEYBOARD, BARE BONES

ASI-103 — \$549
AIS-100E W/2 FLOPPY DISK DRIVES, MULTI-IO CARD W/CLOCK-CALENDAR, 640K RAM, MONOCHROME GRAPHICS

OUTSTANDING
PC/XT/AT
VALUES
FROM
PILLAR INDUSTRIES

ASI-3000 SERIES
TURBO/AT COMPUTER

ASI-3000 — \$899
80286 10 MHz 512K RAM, BARE BONES W/KEYBOARD

ASI-3001-M — \$1069
ASI-3000 W/1.2 MB FLOPPY, MONOCHROME GRAPHICS, MONITOR

ASI-3003-E — \$1599
ASI-3000 W/1.2 MB FLOPPY, 360K FLOPPY, EGA BOARD, 20 MB HARD DISK.

OPTIONS

GB-001 COLOR GRAPHICS ADAPTER	\$45
CGP-001 COLOR GRAPHICS ADAPTER W/PRINTER PORT	\$50
EGA-001 ENHANCED GRAPHICS ADAPTER	\$125
RGB-14H 14″ CGA COLOR MONITOR	\$285
EGA-14H 14″ EGA COLOR MONITOR	\$379
DIB-541 MULTI-IO CARD W/CLOCK-CALENDAR	\$63
HFA-286 "AT" HDD/FDD CONTROLLER W/CABLE	\$130
HDK-020 20 MB HARD DISK W/XT CONTROLLER	\$325
CRT-12M 12″ MONOCHROME MONITOR	\$85
CRT-12S 12″ MONOCHROME MONITOR W/SWIVEL BASE	\$95

There is a \$12.00 flat charge to install any options except with pre-configured systems.
All prices FOB City of Industry, CA. Terms C.O.D.
3% Service Charge for MASTERCARD and VISA.
Quantity Discounts Available.

PILLAR INDUSTRIES

15318 E. Valley Blvd.
City of Industry, CA 91746
(818) 333-9106

YOU'LL BE SAVIN' THE GREEN
WHEN YOU SHOP AT O'SHAUNECY'S

[714] 852-1921

XT SYSTEM

- 1 XT W/640K Turbo (4.77 - 8 hz)
- 1 150w Power Supply
- 1 5060 Keyboard
- 2 Floppy drives
- 1 SAMSUNG Monitor
- 1 Mono card (Hercules Compt.)
- 5 Software Diskettes
- 1 Year Warranty

$599.00

XT SYSTEM W/HARD DISK

- 1 XT W/640K Turbo (4.77 - 8 hz)
- 1 150w Power Supply
- 1 5060 Keyboard
- 1 Floppy drive
- 1 SAMSUNG Monitor
- 1 Mono card (Hercules Compt.)
- 5 Software Diskettes
- 1 SEAGATE 20 Mg H.D. W/ Western Digital Controller
- 1 Year Warranty

$875.00

AT SYSTEM

- 1 AT W/640K (6 - 8 - 10 hz)
- 1 200w Power Supply
- 1 1.2 mg Floppy Drive
- 1 SEAGATE 40 mg Hard Disk
- 1 SAMSUNG Monitor
- 1 Mono Card (Hercules Compt.)
- 1 Enhanced Keyboard (12 Function Keys)
- 5 Software Diskettes
- 1 Year Warranty

$1550.00

DEALERS INQUIRIES WELCOME

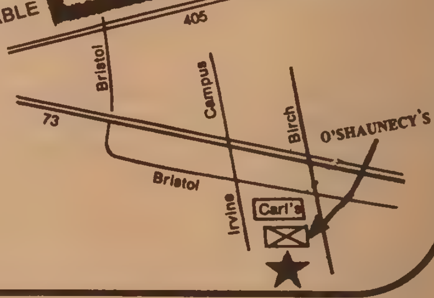
MANY OTHER PRODUCTS AVAILABLE

O'SHAUNECY ENTERPRISES
2082 South East Bristol #4
Santa Ana, California 92707
[714] 852-1921

OTHER PRODUCTS

Hayes Compatible Modems	$ 95.00
Color Monitor	$275.00
EGA Color Monitor	$379.00
Star NP-10 Printer (100cps)	$189.00

ALL SYSTEMS COMPLETE READY-TO-RUN
FCC CLASS B APPROVED - 1 YEAR WARRANTY



DATAFOX™
COMPUTERS

A family of quality computers for the serious user.

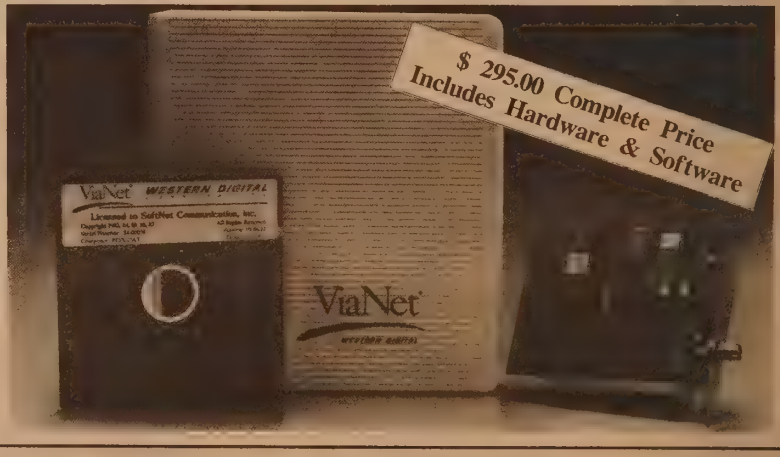
- *XT and AT Compatible Computers*
- *Monitors and Modems*
- *New Small Footprint AT and 386*
- *Nationwide Service*

For the dealer nearest you, call: **(800) 821-6317**

See us at
COMDEX/Fall '87
November 2–6, 1987
Riviera Hotel
Las Vegas, Nevada

DATAFOX

ViaNet & KAL1000
Local Area Network
The Perfect Pair!!!



$ 295.00 Complete Price
Includes Hardware & Software

The performance leader of all LAN systems based on Western Digital's ViaNet (R) software.

- 2 Mega bits/sec
- Serverless, fully distributed
- Supports DOS 3.xx
- Can share All resources
- Unix-like DOS shell
- Password Protection
- File & Record lock
- Easy to install & use

SoftNet
Communication, Inc.

(800) 533-1157 Toll Free Order
(516) 829-6536 Technical Support
15 Hillcrest Drive, Great Neck, NY 11021

avoids this problem: "Each time you initially load the program, pull down the file menu and select open. From the dialog box select cancel, and then continue to play." On another occasion, the program left part of the edge of each tile behind the screen when the tile was removed. This glitch seems intermittent.

Although there are options for two-player and multiplayer games, most users will probably pursue *Shanghai* as a solitary addiction. The designers have thoughtfully provided ways to "cheat" by backing up one move at a time, or by "peeking" under a tile (this forfeits the game, however).

Shanghai is simple enough to please the youngest player, and subtle enough to interest the deepest strategist. It is a good example of the extraordinary graphics that can be realized on the Apple IIGS. (Activision, 2350 Bayshore Parkway, Mountain View, CA 94043. (415) 940-6044.)

Silent Service:
The Submarine Simulation

Designed by: *Sid Meier*
Published by: *MicroProse (1986)*
For: *Apple IIGS (256K)*
List Price: *$39.95*
Reviewed by: *Mike Markowitz*

Compared with today's nuclear-powered and missile-armed leviathans, the submarines of the Second World War were so feeble that it is hard to believe they were nearly the decisive weapons in two oceans. Subs were often slower than the ships they hunted. They could stay under water for only a few hours. Their torpedoes were short-ranged and unreliable, particularly in the U.S. Navy. Yet with a little luck and skill, a submarine could sink the mightiest warship.

Silent Service is a simulation of U.S. Navy submarine operations in the Pacific between 1942 and 1945. The Apple IIGS version shows how dramatically the sound and graphics of this machine can enhance a game. You *become* a submarine Captain, moving between battle stations in a realistically detailed control room. Click the mouse pointer on the periscope and the screen becomes the view through the periscope. Click on the map table and you have a chart of your position, and the location of any detected enemy ships. Click on the ladder down and you can check damage. Click on the ladder up and you can scan the horizon with binoculars from the bridge (if you've surfaced). The effect of weather on day and night visibility is realistically modeled.

You can steer, change speed, aim and fire by clicking on the appropriate icon at the bottom of the screen. Mouse-haters (rodentophobes?) can use a full set of keyboard commands for all the game functions. Basically, this is a game of point-and-shoot. Even at this early date, American submarines were equipped with a Torpedo Data Computer (TDC), a sophisticated analog device that automatically set the torpedo course based on predicted target motion. There is therefore no need to "lead" the target (unless your TDC is on the blink. . . .)

On the surface, you can fire your deck gun, using the ⊞ and ⊟ keys to adjust your aim, based on spotting the shell splashes.

The submariner lives in a world of sound, and digitized sound effects play an important role in the game: the sonar "ping" of approaching destroyers, the splash of depth charges hitting the water, the whoosh of a torpedo leaving its tube, and an ominous creaking sound when you exceed your safe depth. *Silent Service* does not live up to its name—there are plenty of explosions, so if you have amplified speakers hooked up to your IIGS, you might keep the volume down low, as a courtesy to the neighbors.

COMPUTERS FOR LE$$

TURBO XT
- 4.77/8 MHz M.B.
- 256K
- 150W Power Supply
- FDC
- One 360K Drive
- MGP
- XT Keyboard
- XT Case
- 12" Mono monitor

TURBO XT $399

AT
- 6/8 MHz M.B.
- 512K RAM
- 200W Power Supply
- FDC
- One 1.2 M Drive
- MGP
- AT Keyboard
- 12" Mono monitor

AT $899

LCD PORTABLE AT $1299

ALL SYSTEMS ARE FULLY TESTED & ASSEMBLED W/ 1 YEAR WARRANTY

COMPLETE SYSTEMS WITH MONITOR & KEYBOARD
JINCO COMPUTERS INC.
(818) 309-1108
5122 Walnut Grove Ave., San Gabriel

AT is a reg. trademark of International Business Machines.

NEW VERSION 3.0!
THINGS TO DO BY 5:00 OR ELSE!
1. Locate all files from June to October.
2. Sort by name.
3. Move to back up disk.
4. Reorganize hard disk.
5. Make copies for all employees.
RYATTENNANT

If working with DOS was easy, you wouldn't need TopDOS!

Let's face it: working with DOS can humble even the most advanced user. Which is why we created TopDOS.

"As a program that offers to improve DOS, TopDOS is a marvel." — *InfoWorld*

TopDOS makes working with DOS simple by providing a RAM-resident full-featured text editor, enhanced command-line editing, on-line help for DOS commands, and a dynamic TREE command that instantly displays your hard disk directory structure and provides simple point-and-shoot commands to copy, delete, move, edit and execute files.

"One way to make DOS better, if not the best, is a product called TopDOS. Its HISTORY command, which lets you replay previous DOS commands, is worth the price of admission alone . . ." — *Business Software*

TopDOS makes working with DOS easy by adding UNIX-like features such as a HISTORY command, a MOVE command for moving files between directories, an ALIAS feature for creating custom DOS commands, and the fastest WHEREIS command 'thereis' for instantly locating files.

"TopDOS is a well-designed, well-executed product. It comes with an excellent manual and quick-reference card, augmented by on-line help." — *PC Tech Journal*

TopDOS even makes working with DOS 'fun' with tricks like auto-command and filename completion, a transposition command in case you type "coyp" instead of "copy", keyboard macros, automatic screen blanking, EGA support in 43 line mode and much more.

"This is a software package that you'll soon wonder how you ever did without." — *The Los Angeles Times*

30-Day, Money-Back Guarantee.

FrontRunner
DEVELOPMENT CORPORATION

Get The Most Out Of DOS With TopDOS!

Special Offer
For MicroTimes Readers*
Save $10 Only $59.95
Order Toll Free and mention this special offer or send us the coupon below.

Call Now And Save **(800) 654-7494**
14656 Oxnard St,
Van Nuys, CA 91411

YES! ☐ I want to get the most out of DOS with TopDOS.
Attn: MicroTimes Special. Just $59.95
Name ____________
Address ____________
City ____________
State ____________ Zip ____________
Credit Card expiration date: ____/____
Card # ____________
14656 Oxnard Street, Van Nuys, CA 91411
Purchase by Check, Money Order or Credit Card. All orders add $3.00 shipping. CA residents add 6.5% sales tax. Send $5.00 for demo disk. *Offer expires 12/31/87.

TopDOS runs on any IBM PC/XT/AT or compatible with DOS 2.0 or later. Requires 40K. **Not Copy Protected.** MS-DOS is a ™ of Microsoft. IBM is a registered ™ of International Business Machines. UNIX is a ™ of Bell Labs. TopDOS is a ™ of FrontRunner Development Corporation.

DESKTOP PUBLISHING

EXPERTS on VENTURA PUBLISHER
Consultants at CalTech

Dr. Connie A. says:
"Thoroughly knowledgeable, outstanding support. . . now, I love Ventura Publisher"

SPECIALISTS

Complete PC/AT Desktop Publishing System
$3995 or $118 per month

- PC/AT with 40 mb Seagate HD (38msec)
- Okidata(ACER) laser printer with 1.5 mb RAM
- Ventura Publisher
- Mouse Systems mouse

VENTURA PUBLISHER
$525
♠♥♦♣FREE♣♦♥♠
3-hour orientation class with purchase

ADD-ONS

Amdek 1280	795
Kicker Hi-Res Upgrade	Call
Princeton Scanner	895
GMS Scanner w/OCR & FAX	Call
Okidata(ACER)	Call
XEROX 4020 Color Inkjet	1195
HP LaserJet II	
AST Turbolaser/PS PostScript + printer	Call
ACER 1100(386 machine)	Call

"REALTORS"
PC computers for use to access the MRMLS listing service
ALL brands available
"Landmaster" NETWORKED Property Mgt. Software
♠♥♦♣FREE♣♦♥♠
Installation and Instruction
CALL for demo

The Computer Lab
630 W. Duarte Rd, Ste 206
Arcadia, CA 91006
(818)445-1626

Ventura Publisher's Users Group
Call for Info

This ad created by The Computer Lab on Ventura Publisher

WHAT'S HAPPENING?

Check the MicroTimes Calendar of Events in this issue for computer-related classes, seminars, and shows in your area.

You'll need to remember a few numbers to survive. Your maximum periscope depth is 44 feet—below that you're nearly blind. Water pressure will start to crush your hull like an eggshell at 300 feet (increased to 400 feet later in the war). Your torpedoes run out of steam at 4500 yards (being used to modern naval games, with 30,000-yard torpedoes, I forgot this limit, and wasted many shots. . .). Your deck gun can reach out 8000 yards, but it is only lethal to small ships. It takes ten minutes of real time to reload torpedo tubes. This can seem like eternity when Japanese destroyers, intent on ramming, are bearing down on you.

One of the first maneuvers to practice is a 180-degree turn, to bring your stern torpedo tubes to bear on the target when your bow tubes are empty. This is also handy for running away. You can even pull the favorite old trick of movie submarine captains: pressing the ? key will send up an oil slick and debris that may fool the enemy into thinking you're dead.

The designers made a few compromises with reality, to make the game playable. Convoys are pretty hard to find if you hang around the shipping lanes. There are no enemy patrol planes to make your life miserable (submarines caught on the surface by attacking aircraft were almost helpless). Your periscope includes an automatic range-finder display (range estimation was actually a tricky business. . .). You can only have four torpedoes in the water or four shells in the air at one time—the program does so much number-crunching for every shot that the graphics seem to slow down until the microprocessor catches up.

The game can be played on three levels. "torpedo/gun practice" lets you blast away at four stationary hulks. "Convoy actions" recreate six historic battles from different periods of the war. "War patrols" begin in port, extend over several battles and end when you return to port, or sink. You cannot save a game in progress, but you can record your victories on the disk.

A 47-page manual is packed with historical notes and tactical hints. The game is copy-protected, but registered owners can get a backup for $10. Any IIGS owner interested in naval history will want to own *Silent Service.* (MicroProse, 120 Lakefront Drive, Hunt Valley, MD 21030.)

Ring Quest

Designed by: *Dallas Snell*
Published by: *Origin Systems (1986)*
For: *Apple II series (64K)*
List Price: *$19.95*
Reviewed by: *Mike Markowitz*

"The Ring of Chaos has possessed the enchantress Lisa and threatens the very fabric of the universe. Unless it is reunited with the Ring of Order, life as we know it may come to an end. The Ring of Order has now found its way into your hands. . . ."

Ring Quest is an illustrated fantasy adventure game. It is designed to appeal to those who love J.R.R. Tolkien's world, while skirting the edges of emulation enough to avoid litigation with the fierce orc lawyers who guard the literary properties of the Tolkien estate.

On the box cover we have the obligatory dragon and scantily-clad, heavily muscled swordsman (steroids must be legal in the Land of Balema). The head of a green-skinned enchantress hovers in the background, badly in need of a conditioning shampoo.

The game follows the familiar conventions of fantasy adventure gaming; i.e., it is essentially a scavenger hunt through a very rough neighborhood. You move in various directions, pick up weapons, spend money to buy information from friendly wizards, and attempt to kill monsters that impede your progress. Neither the bow and arrows

AMERICAN DIGITAL DISCOUNT ASSOCIATION

SUPER iXT SYSTEM

with Floppy Drive
Floppy Drive Controller
Monochrome Monitor
Video Card
20 Mb Hard Disk

Model II/8MHz	**895.00**
Model III/10MHz	**945.00**

Multisynch Monitor

TAXAN 770 Multivision
14'' Screen, 800x600........**$525**

TAXAN 570 Card
auto switch, 132 column emulator, PGA, EGA, MGA, CGA........**$179**

TAXAN 770
w/TAXAN 570 card
special package price.....**$695**

SUPER iAT/10 MHz SYS

Super iAT/10 MHz System

with 640K Memory • 1.2 Mb Floppy Drive
40 Mb Hard Disk (39ms)
Monochrome Monitor • Video Card

Super iAT System $1495

Please call for Super iAT 12 MHz

ACER 386 System

ACER 1100

CPU — Intel 386
16 MHz Clock Speed
1.2 Mb Floppy Drive
40 Mb High Performance Hard Disk............ **$3500**

TOSHIBA LAPTOP-3120

AT Power in a Compact Size
GaS Plasma Screen
8MHz Speed
640K Memory
One 3.5'' 720K Floppy Drive
Parallel/Serial Port
20 Mb Hard Drive

T3120 Laptop	**$ Call**
T1000 Laptop	**$ Call**

TAPE BACKUP SYSTEM

ARCHIVE 60Mb Tape Backup
Self Contained & Menu Driven Image &
File by File Backup • PC/XT, AT & Compatibles
Quick Data Format

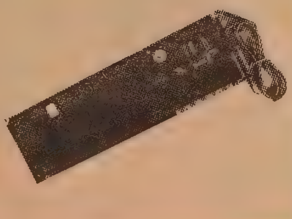
Internal **$495**
External **$595**

MODEMS

1200 Baud Internal.....**$89**
Fully Hayes Compatible

ADDA 2400 Baud Internal
w/ProCom Software
Support Com 1 - Com 4
Made in U.S.A........**$159**

U.S. Robotics 2400 Baud
Internal w/BitCom Software
Made in U.S.A........**$189**



EGA MONITOR

TAXAN 765 Monitor
14'' Screen, 650x350 **$415**

TATUNG 1380 Monitor
13'' Screen, 650x350 **$395**

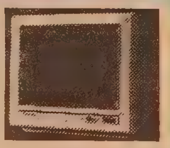
EGA CARD

SUPER EGA CARD **$165**

ATI NEW ENHANCED CARD
Auto-switch Capability, 800x560, 132 Column emulation supports VGA, PGA, EGA, MGA, CGA **$195**

RGB MONITOR

CGA Spec.
640x200
Resolution.



TAXAN 720	**$295**
TATUNG 1360	**$325**
ADDA RGB	**$295**

PRINTERS

240cps in Dot Matrix. 50cps in Near Letter Quality. Epsen 286 Compatible Tractor & Friction Feed.

FORTIS DM2015 - 132 Col.	**$395**
FORTIS DM2010 - 80 Col.	**$345**
DM1310 130cps, 80 Col.	**$225**

EPSON PRINTER 300cps, NLQ Mode

EX-800 80 Col. (OEM)	**$ Call**
EX-1000 132 Col. (OEM)	**$ Call**

HARD DRIVE for PC/XT

20 Mb w/Controller	**$295**
30 Mb w/Controller	**$345**
60 Mb w/Controller	**$795**
100 Mb w/Controller	**$1495**

HARD DRIVE for PC/AT

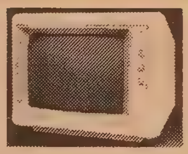
40 Mb By Seagate	**$445**
40 Mb Micropolis, 25mS	**$695**
60 Mb Micropolis, 25mS	**$995**
70 Mb Micropolis, 25mS	**$1095**
80 Mb By Seagate	**$1195**
120 Mb By Maxtor, 25mS	**$2995**

TTL MONO MONITOR

TTL Monochrome Monitor

Taxan 123 Green	**$109**
Taxan 124 Amber	**$119**
Tatung Green	**$ 99**
Tatung Amber	**$109**
ADDA Amber	**$ 89**

COMPOSITE MONO MON



Taxan 118 Green	**$ 99**
Taxan 119 Amber	**$109**

EMS CARD

0K Expandable to 2.5 Mb
Supports EMS Standard
Works with Lotus Release 2 Etc. w/Software

For AT	**$89**
D-RAM 41256	**$ Call**

ADD-ON CARDS

Mono Graphic/Printer Port	**$49**
Color Graphic Card	**$49**
XT Multifunction w/384K Memory	**$159**
XT Multi-I/O Card	**$69**
XT Mini-I/O Card	**$59**
AT Mini-I/O Card	**$69**

LASER PRINTER

LASER PRINTER
By HP
Laser II
$1795

PC XT/AT KEYBOARD

KEYBOARDS
for
IBM PC/XT, AT

AT Style	**$59**
Enhanced AT Keyboard	**$79**

FLOPPY DISK DRIVES

XT-360K	**$ 89**
AT-1.2 Mb	**$129**
AT/XT-3½''	**$ Call**
Apple IIC & IIE	**$125**
Macintosh MAC-800K	**$195**

POWER SUPPLY

Uninterruptable Pwr Supply
Power Failure Interrupt Signal to Computer
Back-up Power for 15 Min.
Noise Supression & Surge Protection

500 Watt	**$ Call**

POWER SUPPLY

150 Watt Power Supply For PC/XT	**$49**
200 Watt Power Supply For PC/Baby AT	**$69**
200 Watt Power Supply For PC/AT	**$79**

SYSTEM SOFTWARE

(New)
MS DOS 3.3
w/GW BASIC
$ Call

FAX MACHINE

SHARP
Model FD-200
Support Group II & Group III w/Telephone
$1495.00

ACCESSORIES

8087 Chip	**$ Call**
80287 Chip	**$ Call**
Printer Cable	**$12.00**
2-Way Data-Switch Box	**$29.00**
3-Way Data-Switch Box	**$39.00**
Power Directory with Modem Protection	**$49.00**

Prompt delivery, usually shipment within 48 hours (except personal check orders). We welcome major educational institutions and government agencies to establish open accounts (P/O) status with us to facilitate shipment of orders. Write or call for details.

Prices quoted above do not include UPS shipment charges.
Prices subject to change without notice.
California residents add 6½% sales tax.
Mastercard or Visa add 3%

Business hours: Mon.-Sat. 8:30am - 5:30pm

IBM PC is a registered trade mark of IBM Corp.
TAXAN is a registered trade mark of TAXAN Corp.

©1987, American Digital Discount Association

AMERICAN DIGITAL DISCOUNT ASSOCIATION, INC.
In Torrance
4040 Spencer St., #M
Torrance, CA 90503
(213) 542-3578

ATLANTIC COMPUTER SYSTEMS

High Performance Computers at AFFORDABLE PRICES!

SYSTEM #1

12.5 MHz AT SYSTEM

$935

Complete System Includes:

- 12.5/6 MHz (Intel 80286 CPU)
- 512 RAM on board (exp. to 1 MB)
- Hard Disk/Floppy Disk Controller (WA2)
- 1.2 MB Floppy Disk Drive
- Monochrome Graphics Card
- Hi Resolution Monochrome Monitor
- Printer Port
- On-Board Clock/Calendar w/battery back-up
- AT Slide-In Case (Turbo switch, reset switch, 3 LEDs)
- 200 Watt Power Supply
- Enhanced 101-Key Tactile-Feedback Keyboard
- Factory Tested/2-Day Burn In

OPTIONS:

1 MB RAM Upgrade	add $ 89
20 MB Fuji Hard Disk (65 ms)	add $245
40 MB Hard Disk (39 ms)	add $425
Serial/Parallel/Game	add $ 45
360K Floppy Disk Drive	add $ 73
Color System Upgrade (640 x 200) (card and monitor)	add $185
EGA System Upgrade (640 x 350) Autoswitch (card and monitor)	add $395

ALL SYSTEMS COMPLETE

READY TO RUN

SYSTEM #2

10 MHz AT SYSTEM

$875

Complete System Includes:

- 10/6 MHz (Intel 80286 CPU)
- 512 RAM on board (exp to 1 MB)
- 360K Floppy Disk Drive
- Hard Disk/Floppy Disk Controller (WA2)
- Monochrome Graphics Card
- Hi Resolution Monochrome Monitor
- Printer Port
- On-Board Clock/Calendar w/battery back-up
- AT Slide-In Case (Turbo switch, reset switch, 3 LEDs)
- 200 Watt Power Supply
- Enhanced 101-Key Tactile-Feedback Keyboard
- Factory Tested/2-Day Burn In

OPTIONS:

1 MB RAM Upgrade	add $ 75
20 MB Fuji Hard Disk (65 ms)	add $245
40 MB Hard Disk (39 ms)	add $425
Serial/Parallel/Game	add $ 45
360K Floppy Disk Drive	add $ 73
Color System Upgrade (640 x 200) (card and monitor)	add $185
EGA System Upgrade (640 x 350) Autoswitch (card and monitor)	add $395

THIS MONTH'S SPECIALS

LogiTech C7 Mouse (Serial)	**$ 67**
2400 Baud U.S. Robotics Internal Modem w/software (Hayes Comp.)	**$155**
Star NR-15 Printer w/cable (240 cps/60 cps, 132 col., 9 pin)	**$365**
Panasonic 109i II Printer w/cable (192 cps/38 cps, 80 col., 9 pin)	**$195**

DEALERS AND VARS: ATLANTIC COMPUTER SYSTEMS carries IN STOCK a full-range of IBM compatible interface cards, keyboards, cases, monitors, printers & accessories. Please contact our sales representatives for dealer terms and prices.

ATLANTIC COMPUTER SYSTEMS

High Performance Computers at AFFORDABLE PRICES!

SYSTEM #3

10 MHz XT SYSTEM

$585

Complete System Includes:

- 10/4.77 MHz (Intel 8088-1 CPU)
- 640 RAM on board
- Two (2) 360K Floppy Disk Drives
- Floppy Disk Controller
- AT Style Slide-In Case
- 150 Watt Power Supply
- Monochrome Graphics Card
- Hi Resolution Monochrome Monitor
- Printer Port
- 84-Key Tactile-Feedback Keyboard
- Factory Tested/2-Day Burn In

OPTIONS:

Serial/Parallel/Clock/Game Upgrade	add $ 35
Color System Upgrade (640 x 200)	add $185
EGA System Upgrade (640 x 350) Autoswitch	add $395
Enhanced 101-Key Tactile Keyboard Upgrade	add $ 20
20 MB Fuji Hard Disk (3 1/2", shock mount, auto park/headlock)	add $315
30 MB Fuji Hard Disk (3 1/2", shock mount, auto park/headlock)	add $345

ALL SYSTEMS COMPLETE

READY TO RUN

SYSTEM #4

10 MHz PORTABLE AT SYSTEM

$1150

Complete System Includes:

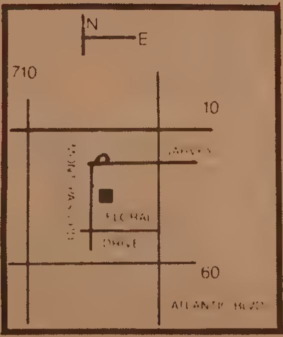
- 10/6 MHz (Intel 80286 CPU)
- 512 RAM on board (exp. to 1 MB)
- One (1) 360K Floppy Disk Drive
- Hard Disk/Floppy Disk Controller (WA2)
- Monochrome Graphics Card
- Printer Port
- On-Board Clock/Calendar w/battery back-up
- Built-In 9" Dual-Mode Monitor
- Built-In Enhanced 84-Key Keyboard
- Built-In 200 Watt Power Supply (110/220V)
- Factory Tested/2-Day Burn In
- Durable Chassis by Storage Systems

OPTIONS:

1 MB RAM Upgrade	add $ 75
20 MB Fuji Hard Disk (3 1/2", shock mount, auto park/headlock, 65 ms)	add $245
40 MB Hard Disk (half height high speed, 39 ms)	add $425
Serial/Parallel/Game	add $ 45
30 MB Hard Disk (PTI 3 1/2", shock mount, 39 ms, high speed, half height)	add $495
360K Floppy Disk Drive	add $ 73
1.2 MB Floppy Disk Drive	add $ 90
12.5 MHz version	add $ 75

Digitech Research dba

ATLANTIC COMPUTER SYSTEMS
1460 Monterey Pass Rd., #C
Monterey Park, CA 91754
TEL: (213) 267-1638
FAX: (213) 267-1583



TERMS: Prices/availability subject to change without notice. All systems carry a 1 Year Labor/6 Months Parts Limited Warranty. All returned merchandise subject to 20% restocking fee. AT/XT are registered trademarks of International Business Machines. Hayes is a registered trademark of Hayes Computer Technology.

WE ARE PCII!!!

PmD PC II®
Pacific Micro Data PRODUCTS INC.

714-PM-TRY-US

714-768-7987

23901 REMME RIDGE, EL TORO, CA 92630

Manufacturing division of Pacific Micro Data Products, Inc.
You've heard of PC II, we were the very first AT & XT compatible manufacturer in America.
We broke open the U.S.A. compatible marketplace four years ago after five years in the computer products and systems distribution business.
We were the ones who spurred the "clone" marketplace into existence worldwide and generated the "copycat" manufacturers.
Our reputation as a manufacturer and systems integrator is widely known throughout the U.S. reseller market, many corporate and aerospace accounts, universities and institutions, the U.S. Government, and the U.S. Army.
When we configure systems for this prestigious clientele, we use the highest-quality FCC-Certified brand-name components, and individually burn-in and test to assure that each system, as well as our reputation, remains intact.
We are now making a marketing move into the end-user marketplace, making available to the the purchasing public for the very first time,

THE WORLD-RENOWNED PC II® !!!

MONOCHROME SYSTEMS

PC II XT TURBO

All PC XT Turbo computer systems contain the following high-quality components: 640K-120 Nanosecond Zero (0) Wait State Memory, software-switchable 4.77 MHz & 10 MHz systemboard, 150 watt UL-CERTIFIED power supply, AT-Style chassis with keylock, reset button, green power LED, amber turbo LED, red hard disk LED, U.S.-Made Maxi Switch tactile feedback AT keyboard, our exclusive "TEN-PACK" combo-board which includes parallel printer port, serial port, clock-calendar, game-port, optional second serial port, RAMDISK SOFTWARE, PRINT-SPOOLING SOFTWARE & CLOCK SOFTWARE, Microsoft-compatible Mouse port with Microsoft drivers, floppy disk controller, monochrome AND color graphics interface, composite-video RCA port, and state-of-the-art 12″ flat-screen amber TTL monitor with tilt-and-swivel base, and MSDOS 3.2 with GW-BASIC 3.2.

Order your system with any combination of Floppy and Hard Disk drives from the table below.

•All systems are upgradable to One (1) Megabyte ON SYSTEMBOARD for a nominal charge.

All systems carry 2 years parts & labor warranty with optional carry-in extended warranty available for 12, 24, or 36 months.

(Low-cost leasing available)

	No Hard Disk	10MB Hard Disk	20MB Hard Disk	40MB Hard Disk
1 Floppy	$725	$ 925	$1045	$1165
2 Floppies	$815	$1015	$1135	$1255

Add $235 to the above prices for 14″ color monitor with tilt-and-swivel base.

PC II AT-286 TURBO

All PC II AT-286 turbo computer systems contain the following high-quality components: 640K-100 Nanosecond Zero (0) Wait State Memory, software-switchable 6 MHz & 10 MHz (Optional 12 MHz Available) systemboard, 200 watt UL-CERTIFIED power supply, chassis includes keylock, reset button, green power LED, amber turbo LED, red hard disk LED, U.S.-Made Maxi Switch Enhanced tactile feedback with separate cursor and numeric keypads, 16-bit serial/parallel card, monochrome graphics interface with parallel printer port, and state-of-the-art 12″ flat-screen amber TTL monitor with tilt-and-swivel base, and MSDOS 3.2 with GW-BASIC 3.2

Order your system with any combination of Floppy and Hard Disk drives from the table below.

•All AT-286 systems are upgradable to One (1) Megabyte ON SYSTEMBOARD for a nominal charge.

All systems carry 2 years parts & labor warranty with optional carry-in extended warranty available for 12, 24, or 36 months.

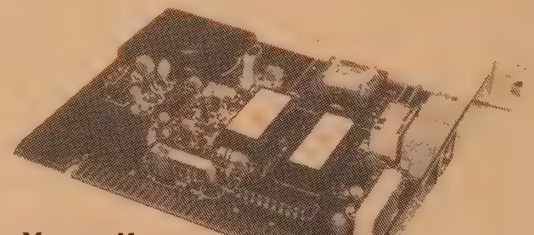
	No Hard Disk	20MB Hard Disk	40MB Hard Disk	85MB Hard Disk
1-360K	$1270	$1555	$1655	$2295
2-360K	$1360	$1650	$1750	$2385
1-1.2MB	$1290	$1575	$1675	$2315
1-1.2MB, 1-360K	$1380	$1670	$1770	$2405

Add $235 to the above prices for 14″ color monitor with tilt-and-swivel base.

REMEMBER, when you purchase a PC II computer system, you purchase the highest quality XT and AT turbo computer systems available, made in the U.S.A. and you're buying FACTORY DIRECT!!!

COMING SOON . . . PC II's EXCLUSIVE MINI-AT 8MHz, 10MHz, 12MHz & 14 MHz.

High Performance + Low Price =
The Complus 1200i Modem



MADE
IN
U.S.A.

Compare for Yourself:

Complus 1200i		**Hayes**
+	IBM/AT/XT Compatible	✓
+	Auto Dial, Auto Answer	✓
+	Call Progress Monitoring	✓
+	Automatic Speed Adjustment	✓
+	2 year warranty	✓
Price: $79		Price: $399

Best price guaranteed! *Plus, **FREE** communications software.*

To place order: In CA: **(800) 543-1224**
Outside CA: **1(800) 542-1224**
Dealer Inquiry/Information: **(408) 435-2826**

We accept: VISA MasterCard Personal checks
California residents add 7% sales tax
Shipping and handling $3.99

DEALERS—Call now about our great $$$ incentive program!

Complus, Inc.
1887 O'Toole Ave, Suite C-104 San Jose, CA 95131

IBM is a registered trademark of International Business Machines. Hayes is a registered trademark of Hayes Micro Computer Products

---

PRINTER & FLOPPY DRIVE BLOW OUT!!

PRINTERS

BROTHER

1409	$320
1509	$346
1709	$472

EPSON

EX-800/1000	$395/$499
FX-86E/286E	$324/$449
LQ-800/1000/2500	$459/$560/$899

TOSHIBA

P321	$499
P341	$695
P351	$925

PANASONIC

P1080 I	$175
P1091 I	$208
P1092 I	$354
P1592	$456
P1595	$486
P3151	$822

SEIKOSHA

SP180	$170
SP1200	$205
SL80	$395
MP1300	$405
MP5300	$550

FLOPPY DRIVES

CHINON 5.25″ 360 KB FDD	$ 82
CHINON 5.25″ 1.2 MB FDD	$ 99
FUJITSU 5.25″ 360 KB FDD (BLACK)	$ 68
FUJITSU 5.25″ 360 KB FDD (GREY)	$ 75
FUJITSU 5.25″ 1.2 MB FDD	$ 85
FUJI 20 MB BARE DRIVE	$220
FUJI 30 MB BARE DRIVE	$225
FUJI 40 MB BARE DRIVE	$450
TEAC 3.5″ 720 KB	$119
TEAC 5.25″ 360 KB FDD	$ 75
TEAC 5.25″ 360 KB FDD (GREY)	$ 79
TEAC 5.25″ 1.2 MB FDD (GREY)	$ 98
TOSHIBA 5.25″ 360 KB FDD	$ 79
TOSHIBA 3.5″ 360 KB FDD (GREY)	$ 81
TOSHIBA 5.25″ 720 KB FDD	$115
TOSHIBA 5.25″ 1.2 MB FDD (GREY)	$ 95

SAMSUNG 1254 AMBER/GREEN $60

Eastern Digital

SALES • SERVICE • REPAIR
1422 E. Wilshire, Santa Ana, CA 92705
(714) 667-0504
Prices Subject to Change Without Notice
Ask for our Line Card for Other Items.

nor the silver dagger is effective against the Manticora. I'm still looking for something that works. . . .

You begin at an eightfold intersection on an open plain. There are mountains, forests, a flaming chasm, and an island with an ill-tempered werewolf. There is also a mountaintop castle where the goal of your quest must lie, but is protected by an impenetrable green forcefield. From time to time, the enchantress will appear, to harass you with spells.

The game is illustrated with colorful graphics, which fill most of the screen, except for a four-line text window. You can speed play by toggling the graphics off, which gives you full-screen text. The text parser (the software that interprets your commands) is rairly unsophisticated, as you might expect for a game constrained by the limits of 64K. There are 80 illustrations, over 100 locations and two little "arcade games" in the adventure. In the first, you must climb to the top of a cliff while dodging falling boulders and snakes. In the second, you must fly down to a platform in the midst of a flaming pit, while avoiding fireballs and arrows.

There is an amusing booklet that provides a background for the story, a quick reference card, and a fragmentary map on plastic laminated stock that the player can mark up with an erasable pen (included). The program uses both sides of a disk (DOS 3.3 format) but if you have two drives, side B can be copied, to speed play. A quick reference card explains the very simple command options.

Ring Quest would be a good choice for a beginner. It is a solid reworking of familiar material, with puzzles that are challenging, but not infuriating. The game is nicely packaged, and very reasonably priced. More advanced gamers would probably find it a bit outdated, since the state of the art in both graphics and text parsing has gone well beyond this level. (Origin Systems, 340 Harvey Road, Manchester NH 03103.)

Go Fish

By: *Netherall Software*
Published by: *HRM Software (1987)*
For: *Apple II series (48K) one drive required, color monitor optional*
List Price: *$69*
Reviewed by: *Mike Markowitz*

Go Fish is a computer simulation that provides a realistic adventure for any young person (Grades 6–12) considering a career as the bookkeeper of an English fishing trawler. While worrying about the price of mackerel in Aberdeen, the dangers of running aground on the Irish coast, and the high cost of diesel fuel and maintenance, the player can absorb quite a bit of economic geography.

Originally developed in England for Cambridge University Press. *Go Fish* is designed for classroom use, with extensive student activity in filling out worksheets and forms copied from masters provided with the Teaching Guide. This illustrated looseleaf manual is excellent, with detailed instructions and background material. There is a cutaway drawing of a typical stern trawler, sketches of 18 different fish species, harbor charts, and ship's logbook sheets. If the British Isles are not your cup of tea, you can play the game on waters surrounding an imaginary continent.

The game screens alternate between a small navigational map, where you set course, and a view of the ship's bridge, with buttons for various options. You can check the hold, which displays a view of the ship with blocks filled in to show how many tons of fish are stowed in cold storage. You can use sonar to find any schools of fish within 100 km. You can check the market prices at any of four ports, or radio for help when you run aground. There is a sizeable salvage fee deducted

COMPUTER TEACHER

LEARNING CENTERS #1 IN O.C.

LEADING EDGE
Model D Turbo System
w/30 MB Hard Drive, 360K Floppy Drive
Free Software & Classes
$1195 Monochrome
$1425 Color

Buy from the Teachers!

Learn from the Teachers.

Since 1981

LOW PRICE GUARANTEE
We Want Your Business
We Will COMPETE on ALL PRICES

BACK-TO-SCHOOL FALL SPECIALS!

AST Premium 286 Model 140 AT Compatible	$2495.
AST Premium 286 Model 140 w/NEC Multi-Sync Monitor	$2995.
Leading Edge Model D w/30 MB Drive & Monitor	$1199.
Apple IIe Systems w/Monitor, Modem & Printer	$1199.
NEC Multisync Laptop — New EL Model	$1699.
Toshiba T1000 Laptop	$ 899.
Laser 128 Apple Compatibles - New Model	$ 380.
H.P. Laserjet II w/512K Memory + Toner	$1699.

More, More, More . . . . Call, Call, Call

PC Drive Installation
Let the experts at Computer Teacher install a hard disk drive in your PC or Compatible.
Prices include drive, controller cables, installation, formatting and data transfer.

Laser Printer Sale
Compare and Save at Computer Teacher
H.P. Laserjet II
Okidata Laserline 6
AST Model PS and EL

Laptop Specials
Toshiba 1000/3100
NEC Multispeed EL
Zenith 181/183
starting at $899

Apple Drive Sale
20 MB Sider D2 by First Class Peripherals. Complete external subsystem including interface, cables, software and manuals.
Apple IIe, IIGS or Mac...$595

Mac 800K Drives	$275
IIe, II+, IIGS Drives	$115
IIc/Laser Drive Adapters	$15

OKIDATA
Laserline™ 6 Printer
Sugg. List $1795 NOW $1345
Fast, Quiet, High Quality Printing! 15 Typeset-Quality Fonts Built-In. Includes compatibility software for LaserJet® and LaserJet Plus®

LASER 128
Apple IIe Compatible
Internal Drive, Internal Parallel/Serial/Game Ports
$380

O'SULLIVAN COMPUTER FURNITURE
Complete Computer Workcenter
A place for everything Workstation, computer hutch and printer stand with 90° angle corner.- (Light hickory grain vinyl laminate.
$149.95 Complete Sugg. List $219.95

Mini Printer Stand
Sugg. List $22.00
NOW $16.49

COMPUTER CLASSES
Days-Evenings-Weekends
• Intro to P.C.'s •
• Intro to Apple II •
• Word Processing •
• Lotus 123 •
• Children's Classes •
CALL FOR SCHEDULE

CALL FOR CURRENT CLASS SCHEDULES

CT
COMPUTER TEACHER (714) 547-0400
15762-B Tustin Village Way, Tustin
INTEREST-FREE FINANCING Open M-Th. 10-7 / Fri.-Sat. 10-5
• On-Site Factory Authorized Service •
FREE DELIVERY — FREE CLASSES w/PURCHASE

(5) Frwy
Tustin Village Way
McFadden off 55
(55) Frwy

A New Way to buy Solutions
Authorized Dealer
The Next Generation of Computer Centers.

GRAND OPENING
Saturday November 21, 1987
10:00 AM to 6:00 PM

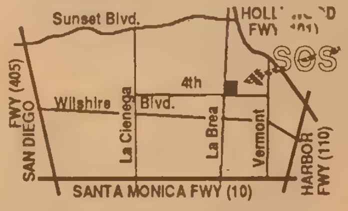
SOS Computers has taken pride in serving Los Angeles for 4 1/2 years with a computer center that works. Now we're proud to announce the opening of our West Valley location. It's large enough to offer everything a computer store should. Full Service means everyone will help you get the job done and we have the resources to do it. 30 complete Try-it workstations. Easy Rental. Full Tech Support and Repair. Learning Center. Hundreds of software packages. Every type of top peripheral, accessory items and supplies plus books, magazines, and much, much more. In a fast, efficient, comfortable store. Sales everyday make it fun! Come to our grand opening.

Free calculators, Free T-Shirts to first 500 customers. Factory people on hand.

Macintosh SE

Featuring Great Products like the Apple Macintosh SE

(213) 857-0371



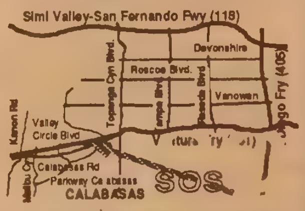
362 S La Brea Ave, Los Angeles
2 Blocks north of Wilshire Bolevard

SOS COMPUTERS

VISA MasterCard

Apple® and the Apple Logo are trademarks registered to Apple Computer, Inc. Macintosh™ is a trademark registered to Apple Computer, Inc

GRAND OPENING
(818) 884-2064



23647 Calabasas Road, Calabasas
Mulholland or Calabasas 101 off ramp

SUBSCRIBE
Send Me The Next 12 Issues For $24 In Mexico & Canada $40 Overseas (surface mail) $40
(Allow 3 to 4 weeks for delivery)
☐ Cash enclosed
☐ Charge card
Send ☐ Bay Area
☐ L.A. Edition
Visa/Mastercard #____
Expires ____ Signature ____
Card Address ____
Name (please print) ____
Company name ____
Address ____
City ____ State ____ Zip ____

Mail to:
MicroTimes Subscriptions
1800 N. Highland #220
Hollywood, CA 90028
or
5951 Canning Street
Oakland, CA 94609

from your account each time this happens.

The objective in *Go Fish* is to make as much money as possible. Maintenance, fuel, crew wages, and salvage fees are paid out of the proceeds of your catch. You can trawl anywhere, and your catch can range from nothing to a whopping 20 tons. The catch will decline in an area that is over-fished.

It is far too easy to run aground. This never happens to British seamen. It is also far too difficult to get back into a port, unless you exactly retrace your course. The problem is the screen resolution. You have to be on target almost to the nearest pixel. There is no way to "zoom" in for a detailed view of your position. This is both unrealistic and frustrating.

Go Fish is copy-protected. One free backup copy is provided with the program, and HRM Software will replace any program disk that is damaged (a lifetime warranty.) The game runs without difficulty on the Apple IIGS.

Generally, I dislike simulations that require a lot of record-keeping on paper. If I want to muck about with little bits of pager, then I don't need a computer. There are some good ideas in this program, but *Go Fish* seems too dull to capture the imagination of it's intended audience. It would be greatly improved by some adventure game elements, and better graphics. (HRM Software, 175 Tompkins Ave., Pleasantville, NY 10570. (800) 431-2050.)

GRAPHICS

TopDraw

By: *Robert A. Hearn and Jeff G. Erickson*
For: *Apple IIGS (512K) one 3.5" drive required; ImageWriter and LaserWriter printers supported*
Published by: *StyleWare (1987)*
List Price: *$90*
Reviewed by: *Mike Markowitz*

TopDraw is the first object-oriented drawing program for the Apple IIGS. "Object-oriented" or structured graphics differ in several important ways from the "bit-mapped" graphics used in several new paint programs for the IIGS. StyleWare, the publisher, compares *TopDraw* to *MacDraw* on the Macintosh. *TopDraw*'s programmers meticulously followed the Apple Human Interface guidelines: the pulldown menus, icon-based tools and dialog boxes will be comfortably familiar to most users. Most menu commands have an equivalent keyboard shortcut.

When you draw something in *TopDraw*, you are creating an object that retains its identity, no matter how you manipulate it. Objects can be selected, grouped, moved, stretched, squeezed, rotated, recolored, duplicated, and subjected to other indignities. A bit-mapped graphics program, in contrast, operates on pixels and groups of pixels. For example, once you use a tool to draw a circle, the program doesn't "remember" that this particular bunch of pixels is a circle.

There are only ten basic drawing tools in *TopDraw:* a pointer (which works something like the "hand" icon in other programs), a text tool, two straight line tools (one for horizontal/vertical lines, the other for lines at any angle) a box tool, a rounded rectangle tool, an oval (ellipse), an arc, a polygon tool and a freehand shape tool. When an object is selected with the pointer it is bracketed by "handles"—eight small black squares. You can reshape an object by dragging its handles.

There is a palette of 16 colors and 16 patterns, which may be edited or moved around the screen. Like all other IIGS graphics programs, *TopDraw* provides two different ways to mix colors by sliding indicators up and down on scale bars with

ALTEC ZIP-386

MONO
SYSTEM
$2,265

- Intel 80386 microprocessor
- IM high speed memory installed
- Expandable to 10 MB
- Phoenix 386 BIOS or Award 386 BIOS
- 4 speed (4.77/6/8/16 MHz)
- 200W power supply
- Case with re-set button
- Enhanced keyboard
- Hard disk/floppy disk controller card
- 1.2M floppy disk drive
- User's manual
- 1 year warranty

ALTEC-286 Enhanced System

MONO
SYSTEM
$1,135

- Intel 80286-10 microprocessor
- IM RAM
- Dual speed 6/10 MHz
- 200W power supply
- AT style case
- Enhanced keyboard
- Hard disk/floppy disk controller card
- 1.2M floppy disk drive
- User's manual
- 1 year warranty

ALTEC-XT Turbo System

MONO
SYSTEM
$ 575

- 8088-1 microprocessor
- 4.77/10 MHz
- 640K RAM
- 150W power supply
- AT style keyboard
- Multi I/0 card
- 360K floppy disk drive
- User's manual
- 1 year warranty

ALTEC-286jr System

MONO
SYSTEM
$1,095

- Intel 80286-10 microprocessor
- IM RAM
- 200W power supply
- ATjr style case
- AT style keyboard
- Hard disk/floppy disk controlled card
- 1.2M floppy disk drive
- User's manual
- 1 year warranty

ADDITIONAL FEATURES	**ADD**
Color System	: $200.00
EGA System	: $400.00
20M hard disk	: $235.00 (386 & 286) $285.00 (XT)
40M hard disk	: $405.00 (386 & 286) $465.00 (XT)
360K floppy disk drive	: $80.00
720K 3½" floppy disk drive	: $120.00
1.44M 3½" floppy disk drive	: $175.00

ALTEC Technology Corporation
5751 Rickenbacker Road, Los Angeles, CA 90040
Tel: 1-213-888-9100
Order Desk: 1-800-255-9971

- Intel is registered trademark of Intel Corporation.
- Phoenix is registered trademark of Phoenix Technologies Ltd.
- Award is registered trademark of Award Software Inc.
- AT is registered trademark of IBM Corporation.

SKINNY
AD
SKINNIER
PRICES

EGA XT Turbo
4.77/10 MHz Turbo Mainboard
640K RAM on board
360K Floppy
150 W Power Supply
84-Key Keyboard
FDC
AT-style case w/ LEDs
EGA Monitor & EGA Card
1 Year Warranty Parts/Labor
FCC Approved
$870
Options:
30 MB HDD & Controller add $325
40 MB HDD & Controller add $495

EGA AT Turbo
6/10 MHz Turbo Mainboard
640K RAM on board
200 W Power Supply
AT Case w/ LEDs
HDD/FDD Controller
AT 101-key keyboard
1.2 MEG Floppy
EGA Card
EGA Monitor (640 X 350)
1 Year Warranty Parts/Labor
FCC Approved
$1295
Options:
30 MB HDD w/ controller add $250
40 MB HDD w/ controller add $450

Novell Network Starter Kit
Contains all network components required to connect 4 IBM PC or compatible computers. Includes:
Novell Netware 86/v.2.0 for up to 8 users
Omninet Network Interface Cards
Complete Hardware Kit (cables, adapter, terminator)
$1288

Special Of The Month
ARCHIVE 40 MB Tape Back Up -
$365

DEALERS/CONSULTANTS WELCOME

ADVANCED PC PRODUCTS
5220 N. Rosemead Blvd. Ste. A
San Gabriel, CA 91770
(818) 285-7560

the mouse: RGB (red, green, blue), and HSI (hue, saturation, intensity). *TopDraw* uses only the 320 by 200 screen resolution (the IIGS also has a higher resolution with fewer colors). The pencil and paintbucket icons are not drawing tools, they are indicators on the palette, showing the currently selected outline color and fill pattern. There is no airbrush tool, but I was able to get the same effect by creating a dot pattern, and using it to fill a circle with no border. A smooth polygon command allows you to round off the sharp edges of an angular object.

There are five line widths, and a unique tool that automatically draws arrowheads at either or both ends of a line. You can edit any line width. You can also change the corner radius for any rounded rectangle. *TopDraw* handles dimensions very neatly. In most paint programs, if you want a three-inch line, you have to hold a ruler up to the screen, and judge it by eyeball. *TopDraw* can place a metric or English unit grid on the background, and a show dimensions command can be toggled on or off for any selected object. You could easily draw a *diagonal* line exactly three inches (or centimeters) in length.

TopDraw treats overlapping objects in a very intuitive way. An "arrange" menu lets you select any object and bring it to the front, send it to the back or shuffle it up or down in the stack. The "invisible" parts of an object still exist, even when they are concealed by other objects.

Bit-mapped graphics programs typically offer one level of magnification ("fat bits"), and one level of enlargement (zoom out to a full-page view from the half-page drawing window). *TopDraw*, in contrast, has a powerful view menu that allows you to reduce or enlarge the scale incrementally.

Although *TopDraw* can run on the minimum 512K (standard for most ProDOS 16 applications) it can take advantage of additional memory to create very large drawings. You can change the actual scale and size of your drawing, up to a monster 8 by 8 standard pages. Big documents can be printed out one page at a time, and then pasted together by hand.

TopDraw can save files in two different formats, its own object-oriented format, or the standard Apple PICT format. Bit-mapped graphics in PICT format can be imported from other programs (such as *PaintWorks Plus* and *DeluxePaint II*). *TopDraw* treats these imported graphics as patterned rectangles, which can be reshaped, but not edited.

TopDraw was one of the first programs to be released with version 1.2 of ProDOS 16, Apple's new operating system for the IIGS. The major visible changes are some new fonts (including the Greek alphabet and Cairo, a collection of cute little hieroglyphics) and a LaserWriter printer driver. It is hard to imagine most home users buying a printer that costs five times as much as the computer, but cheaper printers that emulate the LaserWriter are on the way. For some users a IIGS with *TopDraw* could be the perfect tool. Interior designers and landscape are just two examples of people who need to work with precise dimensions and a wide range of colors and patterns, but don't need the complexity of a full-featured CAD package. Apple would prefer that draftsmen and engineers buy Macintosh, so we will probably never see a CAD program for the IIGS; we may never even see drivers for standard pen plotters. As an output device, your choices are the ImageWriter II, or nothing.

TopDraw is copy-protected, but it can be installed on a ProDOS-formatted hard disk. There is a technical support hot line, but it is not toll-free. The 187-page spiral-bound manual is superbly organized and illustrated. There is a good index, and a very useful quick-reference card. (StyleWare, 5250 Gulfton, Suite 2E, Houston, TX 77081. (713) 668-0743.)

Celebrity Cookbook

By: *Diane Ward*
Published by: *Merrill Ward*
For: *Commodore 64/128, IBM-PC, Apple II (64k)*
List Price: *$19.94*
Reviewed by: *Sue Albert*

When I got my Commodore 64 four years ago, I was frequently asked "What are you going to do with it, record your recipes?" That assumption about the limitations of the computer and females proved ironic. All the recipe programs that appeared for the C64 have been dull, inflexible, and replete with dreary recipes.

Celebrity Cookbook, a recipe program worth it's salt, fills this vacuum. Like a cross between *Bon Appetit* and *Woman's Day* magazines it is bright, cheerful, and chock full of extra features and friendly surprises. The first surprise is Diane Ward, that rarity, a female programmer, who gives *Celebrity Cookbook* its woman's touch. From the fashionable cover art, to the color co-ordinated disks inside, it successfully reflects Diane's philosophy that computer programs should be uncomplicated enough to require only a key stroke to operate, have minimal documentation, and be good fun.

The program resides on two sides of one disk, the second disk being prettily labeled and formatted for storing your personal recipes. The opening screen presents a quote by Andy Rooney, a Scott Joplin rag and then a choice of recipes by the rich and famous, a Wine Directory, Bar Guide, and recipes by the author. Side two offers, (What else?) Diets of the Stars, Perle Mesta's Party Tips, a quiz rating your standing as a guest, and a slide show of food oriented graphics plus the heart of the program, the Recipe Filer.

The versatile Recipe Filer prints out its own short manual. Unlike most recipe programs it has a small flexible word processor instead of pre-set database formats. While appealing to my lazy side, the latter always turn out to be restrictive when recording even a standard list of ingredients and instructions. With the word processor, you are free to arrange each recipe to fit your own notions of proper sequence and layout. The Recipe Filer allows you to rescale recipe ingredients and has a "find" feature for locating ingredients or amounts within a recipe.

The recipes included in *Celebrity Cookbook* run the gamut from "Grandma's Vinegar Cake" by Jerry Lewis to upscale gourmet fare. They read as workable and delicious additions to any recipe collection.

An educated palate is reflected in the Wine Directory with its suggestions for that "perfect" wine to mesh with a large variety of foods. The bar guide not only has authentic recipes for twelve classic drinks but a portion guide which indicates how much liquor to have on hand for your expected guests.

Merrill Ward is very responsive to complaints and comments. When I found the recipes within the program would not print out on my combination of printer/interface, I contacted Diane and she is now doing remedial programming to right this problem on future disks. She is also contacting Ed Asner about correcting his slightly confusing, if intriguing Deep Pot Apple Pie recipe.

Celebrity Cookbook is the first in a proposed series of low cost, cooking programs from Merrill Ward. Each is to contain fifty new recipes and a wide variety of related features like: shopping efficiency, etiquette, nutrition, and the psychology of eating habits. Volume Two, containing a Substitution and Conversion program, is due to be released in a few weeks at $14.95. (Merrill Ward, 255 N. El Cielo Road, Suite 222, Palm Springs, CA 92262.)

LEADING EDGE® HEADQUARTERS

NEW "Turbo" Models Now In Stock

LEADING EDGE®

Authorized Leading Edge® Dealer

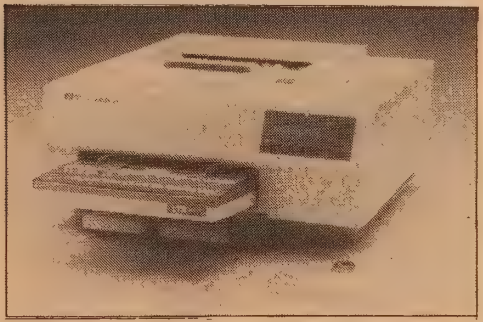
PACKAGE INCLUDES:
- **2 - 360K Floppy Disk Drives**
- **512K Memory**
- **Monochrome Monitor**
- **MS DOS/GW BASIC**

$895

40MB - $1295

***MODEL D-2 IN STOCK—CALL!**

The original LaserJet printer is now better than ever! Introducing LaserJet Series II.



HEWLETT PACKARD® Authorized Dealer

DESKTOP PUBLISHING
- 512K Memory (exp. to 4.5 MB)
- Full graphics
- Software Downloadable Fonts
- Serial or Parallel
- 1 Yr. Nationwide Guarantee
- Includes Cable

CALL FOR BEST PRICE

*Leading Edge and Leading Edge Model "D" are registered trademarks of Leading Edge Products, Inc.

ALL ITEMS IN STOCK!

ALR 386/2 (IBM PS/2 Model 80 Compatible)

- **40 MB FIXED DISK**
- **PHOENIX BIOS**
- 16 MHz 80386 Processor
- 16 MHz 80387 Support
- 10 MHz 80287 Support
- 1 MB 32 Bit RAM
- 1.2 MEG Floppy Drive
- Serial/parallel port
- 8 Exp. Slots
- Mono monitor
- Keyboard
- 1 Year Parts & Labor Warranty
- **MADE IN AMERICA**

OS-2 READY

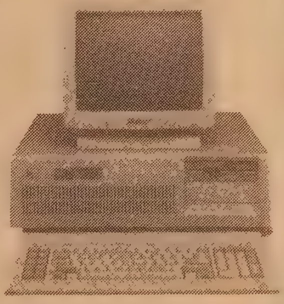
$2995

ALR DART SYSTEM 286

- 80286 Processor (8/10 MHz)
- 1 MB RAM (Expandable to 2MB on Motherboard)
- 1.2 MB Floppy
- **40 MB Fixed Disk (Miniscribe)**
- Phoenix Bios
- Monochrome Monitor & Adapter
- FCC/UL Approved
- 1 year parts and labor
- **MADE IN AMERICA**

100% IBM Compatible

RUNS OS-2



ALL FOR $1895

Prices listed apply to cash sales only. Visa/Mastercard add 3%.

Laptops/Portable
- **NEC**
- **Toshiba**
- **Zenith**

In stock
Orange County's
Lowest prices

LEADING EDGE™ MODEM

1200 BAUD $99⁰⁰
2400 BAUD 199⁰⁰

NAME BRANDS FOR LESS

ZENITH 181 LAPTOP .... IN STOCK
ZENITH 183 LAPTOP (10 MEG Fixed) . IN STOCK

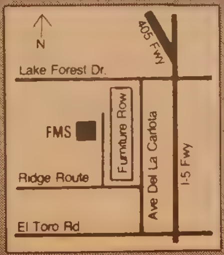
Orange County's Low Price Leader

23461 Ridge Route, Suite B
Laguna Hills, CA 92653

(714) 583-1000

Hours: M-F 9-5, Sat 10-5, Closed Sun.

FMS COMPUTERS



HOLIDAY GIFT BUYERS GUIDE

FOR THE REST OF THE FAMILY

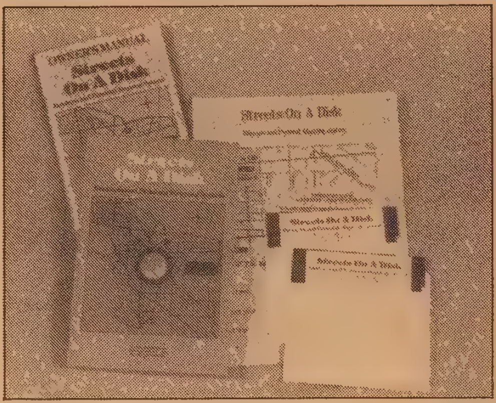
The Finishing Touch To Video Productions

Video Title Shop from Datasoft lets you create titles, borders and graphics that enhance your home, school or business videos. You use a computer, VCR and TV or monitor to create sequences and effects. The package includes a number of font styles as well as customizable fonts. It also allows you to superimpose text over graphics. You can make your titles scroll, fade-in and fade-out. *Video Title Shop* will import graphics from other paint programs. For the Apple II series and Commodore computers. ($29.95) Datasoft, 19808 Nordhoff Place, Chatsworth, CA 91311. (818) 886-5922.

Video Title Shop
A Computer + VCR Utility
FOR PROMOTIONAL USE ONLY
NOT FOR RESALE OR RETURN
Datasoft

Planning Out A Route? Want To Be There Soon?

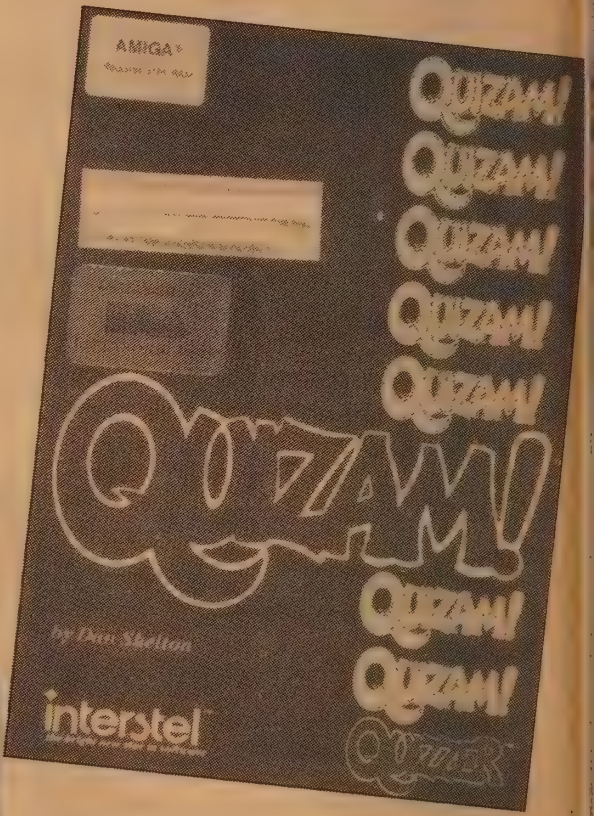
The new *Deluxe Version 2.0* of *Streets On A Disk* from Klynas Engineering is a business and personal mapping system that puts the maps of the United States and major metropolitan areas on your computer. *Streets On A Disk* allows you to print personalized maps and plan the most cost efficient travel routes across town or across the country. It also allows you to store the locations of friends or customers on the map along with addresses and other information. You can even create text files that let you transfer your maps into your word processor, database or other applications. $79.95. $20.00 for each major metropolitan area map. Available for IBM and compatibles. Klynas Engineering, P.O. Box 1666, Simi Valley, CA 93062. (805) 583-1029.


OWNER'S MANUAL
Streets On A Disk

Comic People Makes The Comic Strip Factory Even More Fun

Comic People from Foundation Publishing is a clip art package that offers a half dozen new characters for *The Comic Strip Factory* or any other Macintosh graphics software program. Subtitled *Office Days,* the clip art includes different faces, expressions and positionable body parts that you mix and match to create your own fun in the workplace comic strips. It also includes workplace backdrops and a number of additional office props that can be added to your strips. ($39.95) For the Macintosh. The *Comic Strip Factory* or other Macintosh graphics program such as *MacPaint* is required. Foundation Publishing, 10301 Yellow Circle Drive, Minneapolis, MN 55343. (612) 935-4230.

COMIC PEOPLE
CLIP ART FOR THE COMIC STRIP FACTORY & ALL MACINTOSH GRAPHICS SOFTWARE
Drawn by the creator of Mac the Knife Volumes 3 & 5!
THE COMIC STRIP FACTORY
VOLUME ONE
OFFICE DAYS
FOUNDATION PUBLISHING


AMIGA
QUIZAM!
by Dan Shelton
interstel

Quizam: You Knew All That TV Watching Would Come In Handy

Your job is to dismantle eight satellites that are orbiting the Earth. Their on board defense systems have malfunctioned, however, and they have begun to spout trivial questions. The only way to capture the satellites is to use your knowlege and skill to answer the questions in the shortest amount of time possible. *Quizam* from Interstel has over 2,000 questions on such topics as history, music and television. Not only must you answer the questions, but how fast you do it determines your progress on the game board. Eight different boards are included and there are eight skill levels. Available for the Amiga ($34.95), Apple II series ($29.95) and the Commodore ($29.95). Distributed by Electronic Arts, 1820 Gateway Drive, San Mateo, CA 94404. (415) 571-7171.

DISKETTES

DISKETTES

BOXED
33¢

- Boxed Diskettes are packaged 10 Disks in a plain white box and include the following:
  - Sleeves
  - Labels
  - Hub rings
  - 100% Error-free
  - Lifetime warranty
  - Major U.S. Manufacturer
  - Packaged in Plain White Box

Color 44¢

Light Blue, White, Lavender, Gray, Red, Brown, Green, Yellow, Burgandy, Rainbow Pack

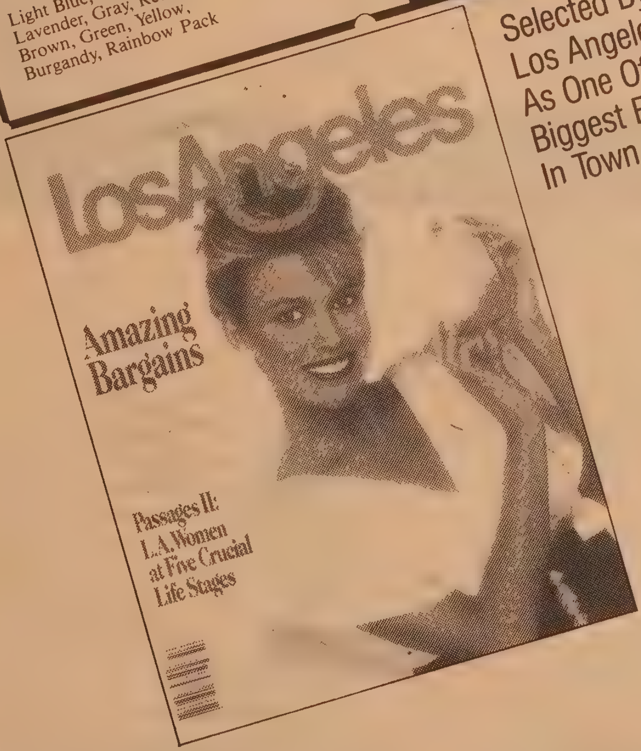
BULK
26¢

- Bulk Diskettes come with hub ring and write protect tabs, packaged in poly bags.

Add the following extras:
- 2¢ Paper sleeves OR 4¢ Tyvek sleeves
- 2¢ Color coded labels

5.25 HD
3.50 SS
3.50 DS
99¢

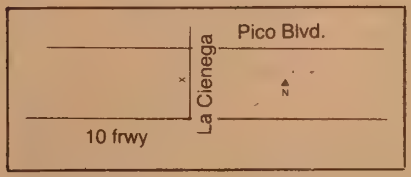
Add $3.00 shipping per 100 Disks
CA residents add sales tax


Los Angeles
Amazing Bargains
Passages II: L.A. Women at Five Crucial Life Stages

Selected By
Los Angeles Magazine
As One Of The
Biggest Bargains
In Town

DATA BUREAU INC.
213-836-3148

1731 S. La Cienega
Los Angeles, CA 90035


Pico Blvd.
La Cienega
x
N
10 frwy

Open Mon-Fri 9-6:30 Sat 10-5

All Diskettes Prices Advertised
Are For 100 Diskettes Minimum

MONTHLY SPECIALS

Seagate
Hard Disks

20MB . . . $275
30MB . . . $299

includes controller & cables

We will meet any advertised price on Diskettes & Hard Disks in this issue.

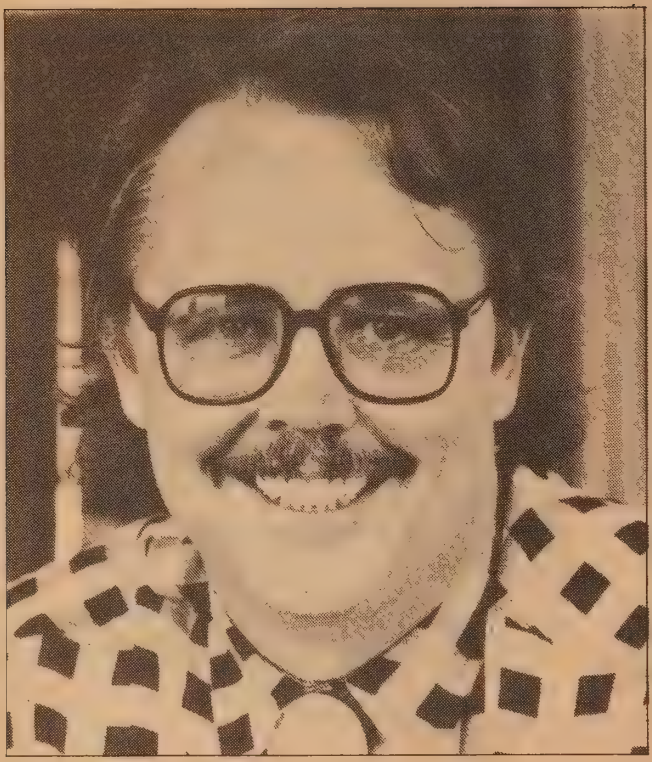


PHOTO: JIM MARSHALL

Personal Computers And The Big Picture

PCW's David Bunnell on technology, the industry, and society

By Mary Eisenhart

David Bunnell got his introduction to the publishing world in high school, where he earned his first dollar as the sports editor of the Alliance, Nebraska *Daily Times Herald*, of which his father was managing editor. He got into social activism shortly thereafter, where as a member of SDS he organized the biggest demonstration in the history of the University of Nebraska in a successful attempt to persuade the University to include an anti-discrimination provision in its off-campus housing policy. He met the personal computer when, after being involved in the Wounded Knee uprising and having his car fired upon, he moved his family to the more tranquil environs of New Mexico and took a job at a startup called MITS in time to witness the advent of the Altair.

Today, at 40, Bunnell presides over one of the most successful publishing empires in the computer industry. He's displayed an uncanny knack for understanding industry trends before they become readily apparent and founding magazines in support of them, including *Personal Computing* and *PC*. His current company, PCW Communications, is part of international publishing giant IDG and includes such popular and well-regarded magazines as *Macworld*, *PC World*, and *Publish!*

He continues to seek out and support what he considers new opportunities in the marketplace — most recently he's added two publications, the biweekly tabloid *Macintosh Today* (scheduled for weekly publication in 1988) and the monthly *Windows*, due next year. He recently organized a conference called Campus Computing '88 to acquaint vendors with what he considers the burgeoning and neglected university computing market. And *PC World* is about to begin publishing a Moscow-based edition.

It hasn't all been smooth sailing. He parted company with *Personal Computing* over creative issues early on, and he's currently embroiled in litigation with Ziff-Davis, to whom his investor secretly sold *PC* back in 1982. At the time, his reaction was to gather the aggrieved staffers, strike a deal with CW Communications (now also part of IDG) for a new magazine giving himself and key personnel part ownership, and put together the first hefty issue of *PC World* in record time. According to various published accounts, Ziff maintains that Bunnell violated his contract with *PC* in setting up the rival *PC World*; Bunnell has contended that the sale itself was a violation of an agreement giving 45% ownership of *PC* to himself and other key personnel. With the suit in progress, he declines to discuss it ("next interview, hopefully" he suggests) — as does a spokesperson for the legal department of Ziff-Davis.

He also continues to be no stranger to controversy, speaking out in his *Macworld*/*PC World* columns in damn-the-torpedoes fashion when the need arises. His November 1986 column, for instance, took on the Georgia anti-sodomy law in response to blandishments from the state's governor urging him to support local high-tech industry.

The Cost of Booting Up . . .
Just Went Down!

San Gabriel's Low Price Leader!!

BEST BUY!

30 MB AT 10 MHz TURBO SYSTEM

- 6/10 MHz 80286 CPU
- 1024K On Board
- AT Case (Lock, 3 LEDs, Reset)
- 200 Watt Power Supply
- 1.2 MB Floppy Drive w/Controller
- **30 MB Hard Disk w/Controller**
- Mono Graphic Card
- Parallel Port
- TTL Hi-Res Monitor
- AT Keyboard (Enhanced)
- 1 Year Warranty

$1299

Color System $1485
EGA System $1669

40 MB ENHANCED 12 MHZ AT SYSTEM

- 6/12 MHz 80286 CPU
- 1024K On Board
- AT Case (Lock, 3 LEDs, Reset)
- 200 Watt Power Supply
- 1.2 MB Floppy Drive
- **40 MB Hard Disk (39 ms)**
- HDD/FDD Controller
- Mono Graphic Card
- Parallel Port
- TTL Hi-Res Monitor
- **Enhanced AT Keyboard**
- 1 Year Warranty

$1585

Color System $1770
EGA System $1955

XT TURBO— COMPLETE SYSTEM

- 4.77/8 MHz Switchable
- 8088-2
- 640K on board
- AT jr. case (lock, 3 LEDs, reset)
- 150 Watt Power Supply
- Two 360K Floppy Drives
- Mono graphic card
- Parallel port
- TTL Hi-Res Monitor
- AT Style Keyboard
- 1 Year Warranty

$595

Color System. $775
EGA System $965

AT TURBO SYSTEM — 10 MHz

- 6/10 MHz 80286 CPU
- 1024K On Board
- AT Case (Lock, 3 LEDs, Reset)
- 200 Watt Power Supply
- 1.2 MB Floppy Drive
- W.D. FDD/HDD Controller
- Mono Graphic Card
- Parallel Port
- TTL Hi-Res Monitor (720 X 350)
- AT Keyboard (Enhanced)
- 1 Year Warranty

$1019

Color System $1205
EGA System $1389

20 MB XT TURBO 10 MHz SYSTEM

- 4.77/10 MHz Board
- 640K on board
- AT jr. case (lock, 3 LEDs, reset)
- 150 Watt Power Supply
- One 360K Floppy Drive
- **20 MB Hard Disk**
- Mono graphic card
- Parallel port
- TTL Hi-Res Monitor
- AT Style Keyboard
- 1 Year Warranty

$869

30 MB System. $889

MONITORS

CTX RGB Monitor	$235
CTX EGA Monitor	335
SAMSUNG 1252G w/ swivel	69
SAMSUNG Flat Screen w/ swivel	80
NEC Multisync	535
PACKARD BELL 1218A	69
MITSUBISHI 1371A Multiscan	495

MONTHLY SPECIAL

ATI EGA Wonder Card
(Enhanced Version)

$190

OPTIONS

FUJITSU 360K Drive	$ 70
FUJITSU 1.2 MB Drive	89
TOSHIBA 3.5″ Drive	99
CITIZEN 120D Printer	160
CITIZEN 180D Printer	195
STAR NP-10 Printer	150

LEGATECH COMPUTERS

789 S. San Gabriel Blvd. #D, San Gabriel, CA 91776
(818) 309-2941

ORDER INFORMATION:
Prompt delivery. $3 handling charge plus UPS shipping. COD Cashier's Check/M.O. ONLY Personal Checks allow 10 days to clear. CA residents add 6.5% sales tax. Prices & availability subject to change w/o notice. No returns & repairs w/o prior auth. All returned merch. subject to 15% restocking fee.
DEALER INQUIRIES INVITED

"You may well ask," Bunnell wrote, "what does a law against sodomy have to do with personal computers and high technology? The answer is that the law conflicts with the very vision that compelled the growth of personal computers.

"The original vision of the personal computer world was based on the principle of a progressive, laissez-faire capitalist society. One that allowed for more personal expression and gave people greater decision-making power. A society where people were judged by their contributions and not their lifestyles.

"Therefore, I feel that the personal computer world should think twice about supporting high-tech development in states that lack a decent social climate for high-tech to operate in."

Hate mail was his daily diet for months.

More recently, he's published a column calling for improved ethical standards in computer journalism, issuing stinging denunciations of practices such as reviewers employed by the product's vendor, writers who steal equipment, and advertising departments that attempt to influence a publication's editorial content. "I hope that over time our image improves," he says now, "and that we're seen as being as respectable, if not more respectable than, people who would work for the *Wall Street Journal* or the *New York Times*. There's no reason that we have to be shoehorned into some category that we're not real journalists, that we're sort of less than genuine professional journalists."

> ***"We should be concerned with the statistics that show that boys are three times as likely as girls to use computers, because if that continues the personal computer is only serving to widen the gender gap. I'd like to see the personal computer narrow the gender gap, as well as the gap between the rich and the poor."***

In the face of his considerable success and prosperity, he's maintained a commitment to his social-activist roots, and would rather talk about the big world than technical issues. "I don't have the same exact viewpoints I did then," he says. "I've evolved, but I care a great deal about justice.

What's Bunnell doing with Dr. Ruth? They were both honored this year by the Fund for Human Dignity, she as Educator of the Year, he as the recipient of the Howard J. Brown Memorial Award for his editorial criticizing Georgia's anti-sodomy law.

"With me, a big issue is the disenfranchisement of large segments of our society. I feel that everyone should participate in the decision-making that affects his or her life. The greater degree of citizen participation, the better.

"But along with that we have to have really good education, so people can make intelligent decisions. So currently, while I'm not concerned anymore so much about ROTC on campus, I'm concerned about the illiteracy rate — 25% of adults in America are illiterate, which means that they can't read at a fifth-grade level. How can you have a really vibrant democracy with true participation unless people can really read and understand and relate and have a cultural literacy as well as the ability to read?

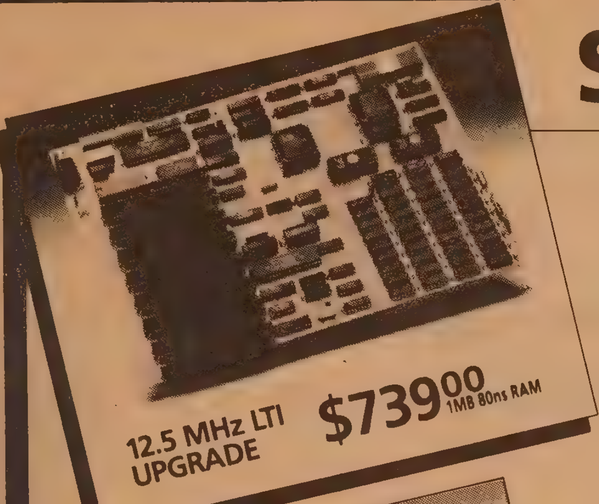
"It seems to me that our country is moving towards disenfranchising more people — I think we made a lot of progress in the late '60s and through the '70s, but it seems like, with the Reagan administration, we've taken steps backwards, and the gap between the haves and the have-nots is broadening. The middle class, I think, is shrinking, and there are more rich people and a lot more poor people. That's not the kind of country I think we want to evolve to, where the country's run by the wealthy who are a small minority, and then the vast majority of people are poor. That makes us evolve to be like some European countries, and I think that that would be very dangerous, and not a good thing."

What role do you see computers playing in society, good or bad?

Computers largely have a potential role versus an inherent role. There's nothing inherent in the personal computer that means that it's going to be a positive force in our culture and our society, but there's a potential.

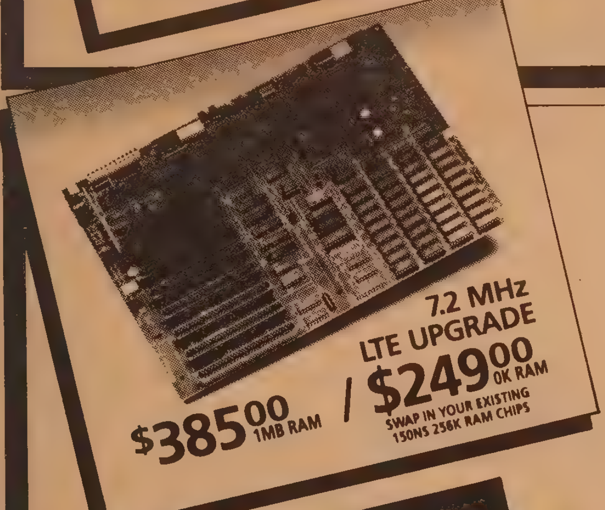
The personal computer can be a very powerful organizing tool. It can be a tool for communications, particularly online communications, where people of like views can get together and organize and find each other. For example, if you're concerned about saving the whales, you can get online and find a lot of other people that are interested in that, and maybe you can find groups that are interested in it, and have instant access and communication with them. It's a terrific organizing tool, where people who might feel otherwise isolated can find that there are people that think similarly to them, and people who are willing to listen to their views and be persuaded. So the ability of

SPECIAL LIMITED OFFER



"The LTI Motherboard is Devastating."

"If you were thinking about buying a machine to replace your PC, you might want to pull out your motherboard and put in this mover and shaker. I have a 10 MHz AT clone that is damn fast, but after playing with the CTXT, my machine seemed like a slug! The sheer processing power available with the LTI motherboard is devastating. This machine is addictive!"
— Richard Katz, reviewer for **CNTRL-ALT-DEL** (Newsletter of the UCLA PC User's Group, June '87).



"Very Impressive Technical Achievements"

"Overall, the units are very impressive technical achievements that have pushed the limits of XT architecture further than any product we've seen. Once installed, one's existing investment in expansion hardware is preserved and significantly enhanced. The LT-286 boards have a number of built-in features that help maximize the performance of existing XT-type peripheral hardware."
— **PC WEEK Magazine** (July 8, 1986).

12.5 MHz LTI
COMMERCIAL*
30MB SYSTEM
$1995.00

"3 Times Faster Than The PC-AT"

"The LTI is the best performing AT-compatible I've seen...the LTI is about three times faster than the PC-AT...the LTI has a Norton Utilities SI rating of 15.3, which is about as high as Compaq's highly touted Deskpro 386! I seriously doubt you'll find an 80286 machine that will outperform the LTI." — CompuServe's **ONLINE TODAY**, August '87.

LTI 30MB SYSTEM (at left) Includes: Seagate ST-238 w/Omti RLL Controller, 360K Floppy Drive, Serial/Parallel/Clock/Game Port, 14" Mono Monitor with Graphics Adapter, MaxiSwitch Keybd., 12.5 MHz 0-Wait-State 1 MB 80ns RAM 80286-Based LTI Motherboard. ***FCC CLASS A COMPLIANT** for Non-Residential Operation. 2nd Floppy Optional.

CTXT's line of **zero-wait-state** 80286 motherboards turn your PC or XT into a true computing powerhouse with **no loss in software or hardware compatibility**. From the powerful but inexpensive 7.2 MHz LTE motherboard to the no-holds-barred state-of-the-art 12.5 MHz LTI motherboard, all CTXT upgrade products offer an added bonus: built-in hard-disc caching for improving hard disk performance by 400%. Don't be fooled by inferior "AT upgrades." Choose the company whose technical innovation and superior engineering is nationally recognized: CTXT Systems, Inc.

CTXT Systems has gained critical acclaim for its LTP-7 Portable Computer, the world's ultimate portable. Fabricated from pure titanium in a patent-pending original design, the LTP-7 is much faster than Compaq's Portable III, has a 14" diagonal, Hercules-compatible gas plasma screen, accepts seven full-length cards, offers a full-size MaxiSwitch keyboard, 40MB hard disk, 3½" and 5¼ floppy drives, measures 8"x17"x15" and weighs only 26 pounds. Targeted for both military and commercial applications, the LTP-7 unit bears witness to the high calibre of CTXT's computer engineering, setting CTXT light years apart from the "competition."

Upgrade motherboards: 2-year warranty, parts and labor. Commercial systems: 2-year warranty on motherboard, 1-year on all ancillary components. **30-Day Money Back Guarantee**. Take advantage of this special limited regional manufacturer-direct promotion before CTXT resumes normal dealer-channel distribution.

CTXT Systems, Inc.

9205-E Alabama Avenue • Chatsworth, CA 91311 • (818) 341-4227
©1987 **CTXT SYSTEMS INCORPORATED**

PC, XT and AT are trademarks of International Business Machines, Inc. Compaq 386 and Compaq Portable III are trademarks of Compaq Computer Corporation. LT, LTX, LTI, LTE and LTP-7 are trademarks of CTXT Systems, Incorporated.

THE QUESTION....
"Why one of the largest microcomputer manufacturers chooses TATUNG as their major supplier?

THE ANSWER IS SIMPLE....
"Quality and Reliability"

Tatung, the world's largest manufacturer of microcomputer monitors has been recognized as the leader in designing components that incorporate the very latest in technology. Every component undergoes the strictest quality testing at every stage of development and production.

NOW . . . . TATUNG introduces the TCS-7000, a fully IMB compatible 10 Mhz AT master piece!

Designed with the same cutting edge of technology to ensure full compatibility and high performance.

Equipped with more standard features than IBM or Compaq, but at only half the cost. Our "AT" provides a full-size AT chassis to ensure future expandability. It's even ideal as a file server on a Local Area Network.

TATUNG has been supplying this same machine to some of the world's largest OEM's under various brand names. If you are using a computer on your job, chances are: you have already used a Tatung product. . .So why pay more for the name, when you can buy directly from the "Original" manufacturer.

Call today, ask for detail about the nationwide service warranty.

*12MHz is also available

QUALITY & RELIABILITY...

* Manufacturer's Suggested Retail Price $\$2095^{00}$
(Monitor Optional)

TATUNG®

- **Corporate Buyers We want your business.**

  Microstar Computer Technology, Inc. was founded under one principle: Total commitment to total support. We do not compromise with quality. We carry and distribute only the finest computer product at reasonable prices. We provide felexible **leasing** and **financing** with terms to meet your financial need.

  Our staff is well trained and qualified to make informative analysis and recommendations. Our in-house-programming staff can provide total solution to meet your needs. If you are looking for computer systems, hardware or software, maybe a Local Area Network or even a workstation, give us a call, and FIND OUT HOW GOOD WE REALLY ARE.

- **Consultant/Reseller:**

  We are one of the largest distributors of the full line of Tatung & Mitac computer products, Packard Bell Monochrome Monitors, hard disks, add-on boards, printers and Modems. Call us for the latest wholesale price list and our best support.

* Registered dealers may qualify for special wholesale prices - call for details.

BRING A LITTLE LUXURY TO YOUR OFFICE.

* Manufacturer's
Suggested Retail Price
$1895^00
(Monitor Optional)

**Meet the Paragon family:
A family of compact, full function, high performance personal computer.
Small enough to grace any desk without overwhelming it, yet out-performed most of its oversized counterpart.**

Our newest and smallest family member is our small foot print "10 Mhz AT Class wonder. . The Paragon 286S".

Our 286S comes fully equipped with a 1.2 MByte floppy drive, enhanced keyboard, on-board enhanced graphics that dazzles your eyes with a wide range of colors or soothes your eyes with clear monochrome resolution as well as, built-in floppy disk controller, serial & parallel port, and even a perpetual clock.

Just plug-in your favorite monitor, power-up, and its ready for your commands.

**So, call your nearest computer dealer to arrange a "Test Drive".
If they don't carry it please show them this ad.**

mitac

DISTRIBUTED BY

MICRO STAR

TEL: (213) 452-9110
FAX: (213) 450-2939

Microstar Computer Technology, Inc.
1642 17th Street. Santa Monica, California 90404

EAST COAST CUSTOMERS PLEASE CALL (212) 779-0040

online computing to enhance democracy — the potential is there, and could be very significant.

But computers can be used as an abusive tool, also — one classic example is the word processing pool where the computer keeps track of your keystrokes per hour and your number of mistakes, or the office networks where messages could be monitored and people's mail could be read. We have to keep in mind that all technologies have a bright side and a dark side, and if you want the personal computer to have a real good impact on society you have to actively make it happen.

We have to actively *apply* the personal computer in positive ways, and we have to look at what's happening with personal computers and blow the whistle when they're being used in abusive ways. If we just say, well, there's something inherently good about it, I'm afraid that we'll be disillusioned and it won't really happen.

What kinds of things would you like to see happening with personal computers that aren't?

(Laughs) I'd like to see several things.

I'd like to see government and industry work together to make sure that personal computers are more available to schools, and to minority groups, and to poor students, and impoverished communities — that they have access to personal computers and that we don't allow the personal computer to just increase the gap between the haves and the have-nots. I think that Apple, particularly, has done a really good job of sort of setting an example, and I'd like to encourage them to do even more. IBM has done some very good things — their *Writing To Read* program was a really excellent example.

But really, these things are small potatoes when you look at them in scope of the size of the problem. We need to do much, much more, and I'd like to see a lot of other companies get involved in these kinds of projects, and I'd like to see the industry as a whole do more to lobby government to provide tax incentives and to provide money for putting more computers in schools in urban areas and the ghettos and making computer technology more accessible to a broader number of people.

Another thing that I've mentioned before and was sort of controversial because it's misunderstood, but I'll mention it in this interview...(laughs) I'd like to see a conscious effort to create what I call software for girls. (laughs) And when I say that, I don't mean software that is...

Barbie software?

...Barbie software or software that has to do with doll-playing; what I'm talking about is software that isn't male-biased. An example is typing tutor programs where you learn how to type by doing shoot-'em-up games. It seems to me that a lot of software is really male-biased, and the games that kids play, particularly educational software, are largely targeted at boys. It's largely written by older boys (laughs) for younger boys.

I think we should be concerned with the statistics that show that boys are three times as likely as girls to use computers, and that they're much more involved in computers, because if that continues the personal computer is only serving to widen the gender gap, and I'd like to see the personal computer narrow the gender gap as well as the gap between the rich and the poor.

I'd like to see the industry itself take more steps to insure that it is a diverse industry. It concerns me a great deal to see so few black faces at COMDEX, for example, and to see that the personal computer industry is largely a white-male-dominated industry. I think we're behind the legal profession, the banking profession — there are other professions where women and minorities play a much greater role than they do in the computer industry, and I think that we as an industry ought to be very concerned about that and make sure that our industry is more representative of the broader culture. I think we'll reap a lot of benefits from that. It's in our self-interest, it's not a matter of just me being altruistic or whatever.

> ***"Dave Hughes in Colorado Springs has a bulletin board where people debate Star Wars and other issues. I think he's an American hero, and we ought to follow his example. I'd like to see a lot more of that. I'd like to get onto CompuServe and see a lot more political debate and a lot less tech talk."***

I'd like to see activists be more involved in online computing. I know that there is some of that going on — there's Dave Hughes in Colorado Springs who has a bulletin board where people debate Star Wars and other issues. I think he's an American hero, and we ought to follow his example. I'd like to see a lot, lot more of that. I'd like to get onto CompuServe and see a lot more political debate and a lot less tech talk.

It seems that one of the problems with personal computers is that they're so engaging that people who are involved with personal computers just *talk* about personal computers. And they forget about the other issues of society. And you can't bury your head into sort of a technical nerdy sand or beach — you can't just be concerned about that technology and ignore the rest of the world.

The rest of the world in fact is much more important than the workings of a personal computer, and that's where I kind of see that the personal computer becomes negative. At the point where you draw the line between being concerned with getting your job done, making society better, communicating better, being more productive; where you go over the line to being concerned about the technology, and how responsive it is, and how much you know about the technology, and being concerned about that, is where the negative side is. It's even at a point in some businesses where tasks that lend themselves to the personal computer tend to become a priority, and the business's tasks that are less amenable to being computerized become less important.

I think that's a real danger, to let the personal computer sort of decide what's important and what's not on the basis of how easy it is to apply the personal computer to the problem.

At the Hackers Conference, Todd Rundgren said, "Nobody's written a line of code yet that produced a Mother Teresa."

I think that's true. How good of a human being you are is far more important than how good of a programmer you are.

Within that context, what do you see as the proper role of computer journalism?

(Laughs) I think the proper role is to be a user advocate. It's really important that computer journalists put themselves in the shoes of the users, and our orientation [at PCW] is that what's good for personal computer users is what's good for personal computing and what's good for the magazines. I think it's real important that we be reader/user advocates, number one.

Secondly, I think that we are in a position to really examine the impact of new technologies, and we need to not just be cheerleaders for every new thing that comes along and sort of encourage people to buy, buy, buy. Instead, we need to be the ones who find out first whether a new technology really is useful, and really is worthwhile. We should report on that to our readers, and we should also be concerned about how do people get more out of the existing products they have.

Everybody does not need a 386 machine or a Mac II. We should be helping people get more out of their old PCs or 128 or 512K Macs, and there's a lot of good technology out there, millions of machines, even old CP/M machines that have a lot of usefulness in them. I think our magazines as well as other magazines should also focus on how you get more use out of the old machines as well as the exciting new machines.

I think that we need to make sure that we have good ethics. There's been examples of poor ethics along with the good — we have to make sure that we're not being biased in any way. You need to be straight with the readers, be honest.

We have to be good journalists and we have to be good technologists, and that's sort of a very tricky combination — to be really good at personal computing technology and also be good writers and good editors. But I think there are a lot of good people in that category throughout computer journalism, and I think that while we have our failings, I believe that by and large we've gotten a bum rap, and that most of the writers, and editors and reporters that I know on all the publications throughout the industry have a tremendous amount of integrity, and they care a great deal about the work that they're doing, and they care about the readers and the users. It's just a few rotten apples that are giving us a bad name. And

Your Laser 128™ Connection

LASER 128™ STARTER SYSTEM

- LOW COST
- Apple IIc/IIe Compatible
- 128K RAM
- 40 & 80 Column
- 1 Parallel/2 Serial Ports
- Mouse Interface
- 5¼″ disk drive
- Thomson 4120 Color Monitor
- Utility Software
- Basic Manuals

$699

LASER 128 EX

- All features of 128 Package, plus these new ones:
- Runs 3½ times faster than Apple IIc/IIe
- Runs 20% FASTER than Apple IIgs
- Built in Appleworks compatible RAM board
- 128K RAM Exp. up to 1 MEG
- Built in Universal Disk Controller

$799

NEW

LASER COMPACT XTE

- 8088 CPU
- 10 MHz
- EGA/CGA/Monochrome & Herc. compatible graphics modes
- 640K RAM exp. to 1 MB
- Lotus/Intel/Microsoft EMS
- One 360K Floppy Drive
- Built in Copy II PC option board

IBM Compatible

$649

UNIVERSAL DISK CONTROLLER **$90**
Allows Laser 128 machines to accept two 3.5″ 800K Mac compatible drives.

5¼″ External Drive

$150

3.5″ 800K Drive

$199

Copy II PC Option Board
creates archival floppy backups for most IBM PC software quickly and easily. Works w/ IBM PC/XT/AT, Zenith 150, Compaq.

$95

PC TOOLS
combines most popular features of Norton Utilities, Mace Utilities and FastBack. Needs 256K.

$24.95

Computer Partners
Come in and visit our showroom.

Communications • Networking software • MAC servers
10356 Beach Blvd. Stanton, CA 90680
(714) 826-9190
Novell Netware • Desktop Publishing • LAN's • Communications
Hours: 10-6 Weekdays • 11-5 Saturday • Sunday by appt.

a few opportunistic publishers who have spoiled it for us.

How did you come to write the Atlanta column?

Well, in the first place I thought it was really outrageous when the Supreme Court ruled to uphold the constitutionality of the Georgia [anti-sodomy] law, because I clearly think that the Georgia law is a gross violation of privacy. And one thing about it that few people seem to appreciate is that it impacts everybody [because of the law's wording]. I did an informal poll around the building and our office, among both straight and gay people, and I was not able to find a single person who has not at one point in their life been guilty of sodomy according to the Georgia statute. (laughs) And so it's something that threatens all of us.

Also, I think the right to privacy is a real key issue in the development of the personal computer, because the personal computer has the potential to abuse privacy. I see that as absolutely a cornerstone of our democracy, and so I found that [law] very outrageous and had been thinking about it in the back of my mind.

What really triggered the column was a letter from Governor Harris, inviting me to take a technology tour of the computer companies in the Atlanta area, with the hopes that I would go back and write glowing reports about how great the Atlanta area is for technology. Which it is, in many ways. But I find it kind of revolting to think that technology which has the potential to liberate people is being developed in an area where they have laws that are very discriminatory and very, I think frankly, un-American.

And so I wrote back to him a simple letter and said that I would not attend his technology tour, I would decline to do so, and would not do so in the future until he assured me that he was actively working to reverse Georgia's sodomy law. And he, or someone in his office, Xeroxed the letter, and sent it around to some of the CEOs of some of the companies in the Atlanta area. People from those companies called our office and started to complain about the letter I wrote.

I thought that was really kind of a low tactic on the part of the governor. Because it was a private letter, and he never responded to my letter. He never wrote back to me, he never called me up, he never talked to me about it. He didn't say boo, but he passed the letter around. So I decided to take it public, by writing a column about it. I felt very strongly about it, so I wrote the column.

It created this amazing reaction. I knew it was very controversial, and I knew that some companies in the Atlanta and Georgia areas would be angry with me. I anticipated that, but I didn't anticipate the volume of the reaction, where I got somewhere in the neighborhood of 5,000 letters. Which is more letters than I've gotten for all my other columns put together — and I've gotten a few letters, because I *have* written a few controversial columns.

In the beginning the letters ran about four to one against me. I received several categories of letters. One was that I was abusing my position as editor in chief and writing about a topic that wasn't germane to the personal computer business, which I thought was a legitimate issue to raise. I could debate that — I don't agree with that, but I thought that was an okay argument.

But then I got letters from people who said that the Constitution of the United States is based on the Bible, and that the Bible forbids sodomy, and therefore the law in Georgia is okay. These letters were the ones that concerned me absolutely the most, because they portrayed a great deal of ignorance, and I wasn't aware that so many people were so ignorant about the American Constitution. I found that appalling and frightening.

> ***"You can't bury your head into sort of a technical nerdy sand or beach — you can't just be concerned about that technology and ignore the rest of the world. The rest of the world in fact is much more important than the workings of a personal computer."***

The third category of letters that were against me were letters that were just — what do you say — hate mail, where people would scrawl "faggot" and write incredibly nasty letters. One letter I got from a guy was so nasty — and he wrote it on his company letterhead — that I Xeroxed it and sent it back to the president of his company. I said, "I thought maybe you'd like to know about how one of your employees is representing you..." (laughs) I never heard again from that.

I did receive a few letters in the beginning that were supportive of me, and over time it seemed like it became more and more balanced, so that maybe by the last couple weeks of receiving letters, about half of them were favorable. I heard from gay rights groups all around the country, I heard from gays in Atlanta.

The most moving experience I had was, I was at a trade show in Dallas, and an elderly man came up to me, his eyes were moist, and he thanked me for the column and said that his son was a gay programmer, and he really appreciated what I'd done. I was very moved by that. I was invited to speak at a couple of gay rights groups, and then I was awarded the Howard J. Brown award, which I shared with Dr. Ruth.

I was really moved by that, and I'm glad I did it. We did lose a few pages of advertising; all the advertisers but one or two, maybe, have come back.

It was worth it. It was worth it because we said "We care about things beyond just the nuts and bolts of computing. We have a bigger perspective, and we're a bigger magazine than just a personal computer magazine. We're a part of the community, the environment, and we care about that environment, and it's important to us."

Also, I think that computer journalists don't just have to write about code. We are human beings, and we can write about the impact that personal computers have in our society, and be concerned about that too. In the long run I think it was a real healthy thing — it really raised the standards, the level of what we can write about as computer journalists. Because I wrote that column, I think other journalists are writing other columns — not on that topic, but they're taking more chances. I sort of pushed the envelope out, and I hope that that is a positive thing.

What effects do you expect to see from PC World's Moscow edition?

We're talking about the computer and democracy, and I think it's really going to be interesting to see what happens — the impact the personal computer is going to have in the Soviet Union.

Can civilians have computers in the Soviet Union?

Gorbachev has said that they're going to have 300,000 personal computers in the Soviet Union over the next two years. I imagine that most of those personal computers are going to be purchased by schools and institutions, so whether individuals can buy them or not, I'm not sure yet.

But I think individuals will lust after them to the point where if they can't buy them they'll acquire them, either through the black market or they'll be able to put enough pressure on their government to eventually start acquiring them. I hope so, and I'd like to see what happens with the impact of that.

We are going to be publishing *PC World* in the Soviet Union beginning next spring. It's an independent operation, where they will largely create their own editorial and their own publication in a joint venture with our parent company, IDG. It's the first time that an American magazine has been published in the Soviet Union, and I think it's a very interesting experiment. I'm supportive of it, because I think that if we could have a lot more ties with the Soviet Union, business ties particularly, but cultural ties as well, it not only increases understanding, it increases this incredible entanglement of mutual interests, where we wouldn't dare want to go to war with each other because it would be bad for business. It's kind of funny, but I think it's true, that the more American companies do business in the Soviet Union, the more Soviet companies do business here, the more exchange of trade and people and ideas — it just seems to me that it creates a climate where we have to learn how to get along better in a political sense.

I say that, but I want to be really clear that I'm not one of these naive left-wing people (laughs) that thinks that the Soviet Union is a good society, and that they have good intentions, and that they can be trusted, 'cause I don't think that at all. I think that history has shown that they *can't* be trusted very much, and that we have to be very careful.

I'm not in favor of just saying, Gorbachev's a great guy and everything's going to be great, because we never know. The recent disappearance of Gorbachev, where he was out of public view for six weeks, was really scary, because it points out there are a lot of reactionary elements in Soviet society that would probably like to do away with him and go back to the old Stalinist days. Stalin was a monster and one of the biggest mass-murderers of all time.

I'd like to see them get out of Afghanistan and stuff like that too. But I'm really hopeful that things are going to improve, and I hope that in a little,

Your Mac II Connection

Macintosh II

MAC II B/W SYSTEM

- MAC II w/ 40 MEG Hard Disk
- Extended Keyboard
- Video Card
- Video Expansion
- Apple Monochrome Monitor

$5299

MAC II COLOR SYSTEM

- MAC II w/ 40 MEG Hard Disk
- Extended Keyboard
- Video Card
- Video Expansion
- SONY MULTI-SCAN Color Monitor

$5699

MAC SE 2 FLOPPIES

- 1 MB Memory
- Keyboard
- Mouse
- System slot for expansion

$2249

IMAGEWRITER II PRINTER

- Apple Compatible
- Prints in color
- NLQ Mode
- Cable included

$499

MAC SE 20 MEG HARD DISK

- 1 20 MEG Hard Disk
- 1 Floppy Drive
- 1 MB Memory
- Keyboard & Mouse
- System slot for expansion
- Basic system software

$2749

1 MEG "SIMMS"

$249

MAC PLUS

- 1 MB Memory
- Keyboard & Mouse
- Basic system software

$1649

MAC II VIDEO RAM

$79

Computer Partners

Come in and visit our showroom.

Communications • Networking software • MAC servers

10356 Beach Blvd. Stanton, CA 90680

(714) 826-9190

Novell Netware • Desktop Publishing • LAN's • Communications

Hours: 10-6 Weekdays • 11-5 Saturday • Sunday by appt.

sort of small way, *PC World* plays a part there. And then in a bigger way, that maybe the personal computer will be a factor too, and help open up the society.

I'm a little skeptical — it goes back to what I said that I don't think there's anything inherent in the technology that will set us free. Personal computers have the potential to do that, and it just depends on the people using them. There are a lot of questions, it's kind of early to tell, but I don't know whether those 300,000 personal computers that Gorbachev talks about are going to have *modems*. I don't know whether people are going to have access to printers. I hope they do.

It's hard to tell — I think the VCR has had a tremendous impact in the Soviet Union and in Poland and in other repressive societies, because it's very easy for people to make homemade tapes of meetings and speeches and things like that, and then pass them around so people can view them in the privacy of their homes. The personal computer has a lot of potential to open up society and empower individuals, and we'll have to see — I think we're putting it to the test.

> ***"Because Apple isn't willing to share its technology, or license it to other manufacturers, they may find that their installed base is proportionally so small to the rest of the world that it's no wonder that they see connectivity as the key to their strategy."***

You've started new magazines in the recent past. What needs do you see them filling?

Macintosh Today, our most recent launch, is specifically targeted at people who are responsible for multiple Macintoshes. People in medium-sized companies and large companies and organizations, including universities, who have responsibility for six or more machines. They are people that typically need to be current with what is happening in the marketplace, so it's designed to be a weekly tabloid news vehicle. It closes on Friday and it's on people's desk on Monday, so they know what is happening up to the minute and can make the wisest decisions, about not only purchases, but about implementation of technology.

When people have large budget responsibility, they have a need for that kind of immediacy. Which is unlike *Macworld*, which appeals to a much broader audience, where people don't necessarily need weekly updates, but they need in-depth product reviews and a lot of how-to hands-on articles that show them how to get through the...(laughs)

The not-so-intuitive interface...?

The not-so-intuitive, increasingly complicated, (laughs) Macintosh computing. Macintosh started out to be easy, but it's increasingly become more complicated as it's become more powerful and diverse.

Windows is a publication that comes out next year, targeted at graphic workstations, particularly 386 machines, running *Windows 386* software. We see the graphic workstation market as being an exploding market.

It's technical, it covers publishing and CAD/CAM, engineering, and advanced applications where you need multitasking, and is a power-user's magazine. It's a magazine for the technically astute and very sophisticated users who have grown beyond the more general magazines like *PC* and *PC World*.

Do you expect its scope to be restricted pretty much to Microsoft Windows, or other windowing environments?

Initially it's focusing almost exclusively on Microsoft *Windows*, but it's not ignoring the other windowing environments. As those environments become important, we will examine them as well as the Microsoft *Windows*. "Windows" is a metaphor for a style and method of computing — graphics-based workstation computing.

Do you see branching into things like Sun workstations?

That's a possibility. I can't say for certain how or when that's going to happen, but we're certainly fascinated by what's going on with Sun, and see Sun as a major player in the future.

Do you see UNIX as a major player in the future?

I think there's hope yet for UNIX. I mean, I was one of the early critics of UNIX, and I think rightly so, but there's been a lot of development of UNIX programs in university environments and in technical environments.

I tend to agree with Steve Jobs' analysis that UNIX has about two more years of life in it, and if during those two years somebody — I presume he's speaking of NeXT or somebody like NeXT — comes up with a really good windowing interface that makes UNIX really accessible to a broader group of people, and usable, then UNIX will survive and actually thrive, because it's a very powerful operating system.

That's the key, though, providing the accessibility to it. He [Jobs] must be working on it or he wouldn't be talking about it, and other people are also working on those kinds of interfaces, which could be the salvation of UNIX. But it better happen pretty soon, because the number of MS-DOS machines is overwhelming. And MS-DOS is becoming more powerful.

[Sun Microsystems'] Bill Joy gave a talk the other day that lumped UNIX and OS/2, both open systems, in the Vanguard of the Future category, and said unkind things about proprietary systems like Macintosh and [DEC's] VMS. Did Apple make the right decision in keeping the Mac interface proprietary, instead of opting for standards and open architecture?

It's really interesting, because there are two sides to that, and one side keeps playing off the other. It seems that Apple's becoming more open, IBM's becoming more closed. And Sun is the one company that has the truly open philosophy.

I think that if I were Apple I would be worried about the size of the installed base of the Macintosh. Everyone right now is very positive about Apple, and there's lots of reasons to be very positive about Apple. But the size of the Mac installed base is really pretty small compared to the MS-DOS installed base, and the MS-DOS installed base is growing at a much faster rate.

The reason is that the MS-DOS machines are open and the IBM machines are cloned, so the operating system is transportable among all those machines. I think that I would have like to have seen Apple at least license Macintosh technology to other manufacturers to make low-cost Macs. You see how Tandy, for example, is really serving what I think is a real positive role in making personal computers more accessible to a wider number of people by creating low-cost yet high-quality MS-DOS machines.

Why couldn't Apple license their technology to Tandy or to somebody like that who could create a low-cost Macintosh clone? I think that could only benefit Apple, because there would be more machines out there to run Macintosh software on. It would stimulate more software.

Because Apple isn't willing to share its technology, or license it to other manufacturers, they may find that their installed base is proportionally so small to the rest of the world that it's no wonder that they see connectivity as the key to their strategy. I think that the connectivity between the Mac and the IBM is, at this point, largely theoretical — it's not very real yet.

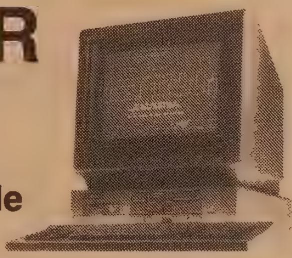
It's a real problem for Apple in the long run — they absolutely have to integrate the Macintosh with IBM's standard computers in a way that both of those machines can live in an office environment and both of them can be on the same workgroup-type networks, and they can exchange files and programs.

It seems to me that personal computing is evolving to the point where many personal computers will run several operating systems. It seems likely that you'll have 386 machines that will run UNIX and MS-DOS — we already have that, in some cases — and it would be great to have Mac programs, IBM programs, and UNIX programs. Why shouldn't the user have the accessibility to all those programs through one machine — why should you have to buy three machines? I see that as the one kind of long-range problem that Apple may have — that it may find itself, in spite of its

Your ACER Connection

ACER 710

PC/XT Compatible

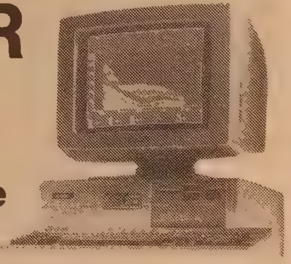


- 8088-10 CPU
- 4.77/10 MHz Switchable
- 16 bit processor
- Clock/calendar
- 768K RAM standard
- One 360K Floppy Disk Drive
- One RS232C Port
- One Parallel Printer Port
- Built in Floppy Disk Controller
- Built in 3-in-1 Graphics Display
- 84 key keyboard
- 12″ SOFT WHITE Mono monitor
- MS DOS 3.2, system utilities
- 1 Year Limited Warranty

$849

ACER 910

PC/AT Compatible



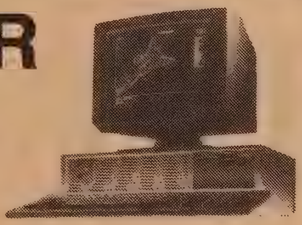
- 80286 CPU
- 6/10 MHz
- 1 MB RAM
- 1.2 MEG Floppy Disk Drive
- 6 expansion slots
- 20 MB Hard Drive
- 135 Watt Power Supply
- 2 Serial/1 Parallel/Clock/Calendar
- Standard AT Keyboard
- TTL 14″ Amber Monitor
- DOS
- 1 Year Warranty

$1749

Reg. $2495

ACER 900

"Power AT"



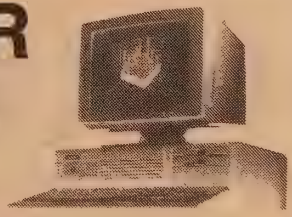
- 80286 CPU
- 6/10 MHz Switchable
- 1 MB RAM
- 1.2 MEG Floppy Disk Drive
- 8 expansion slots
- 2 Serial/1 Parallel/Clock/Calendar
- FDD/HDD Controller
- Extended AT Keyboard
- 40 MB Hard Drive
- 200 Watt Power Supply
- EGA Monitor & Control Card
- MS DOS 3.2
- 1 Year Warranty

$2449

Reg. $3595

ACER 1100

386 MACHINE



- 80386 CPU
- 16 MHz
- 1 MB on main board
- Clock/calendar/battery
- 1.2 MEG Floppy Disk Drive
- 8 expansion slots
- 40 MB Hard Drive (28 ms)
- FDD/HDD Controller
- Enhanced 101-key keyboard
- MS-DOS 3.2
- GW BASIC 3.2
- Dual frequency enhanced color monitor
- 1 Year Warranty

$3549

Reg. $4995

ONE YEAR SPECIAL WARRANTY:

includes 4 Months IN HOME SERVICE FROM TRW.

Computer Partners

Come in and visit our showroom.

Communications • Networking software • MAC servers

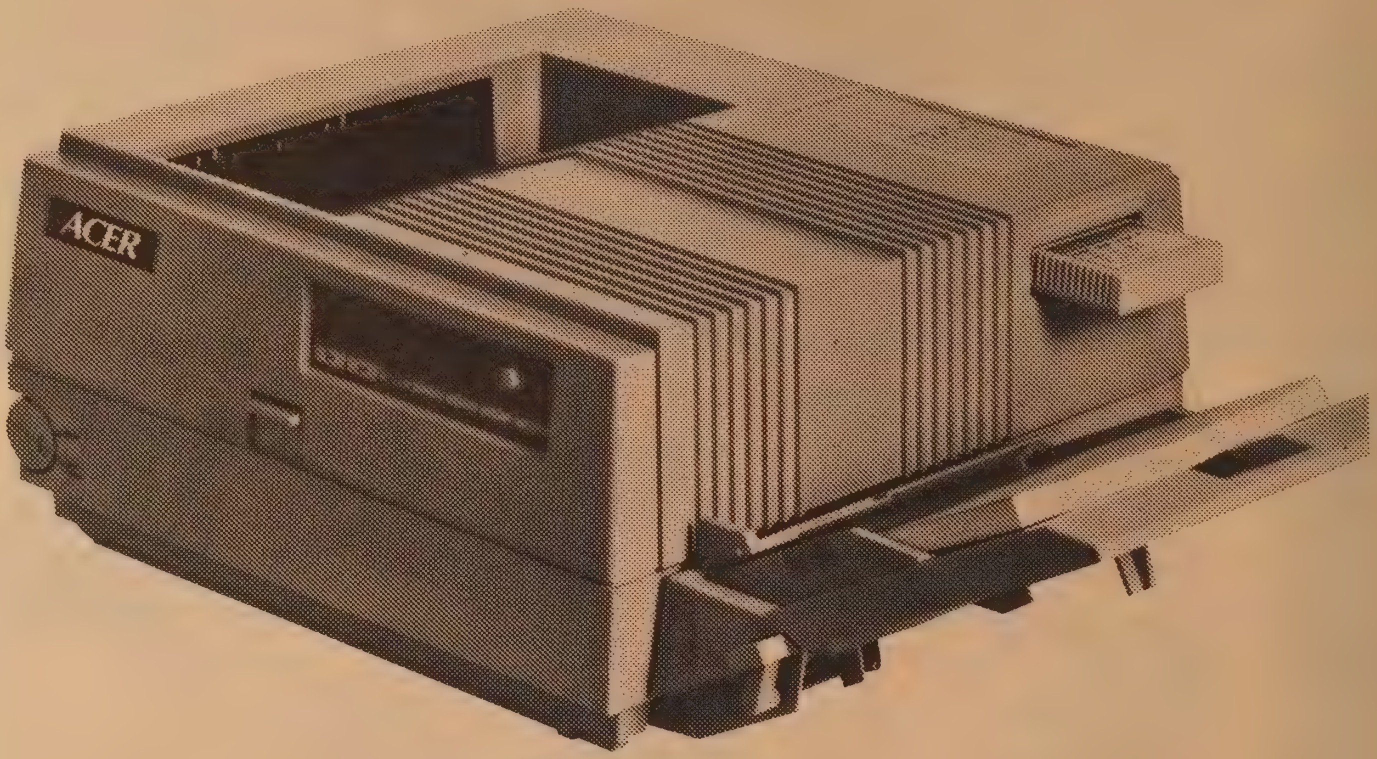
10356 Beach Blvd. Stanton, CA 90680

(714) 826-9190

Novell Netware • Desktop Publishing • LAN's • Communications

Hours: 10-6 Weekdays • 11-5 Saturday • Sunday by appt.

AT is a registered trademark of International Business Machines.



HOW TO LOOK GOOD ON PAPER.

If you want your reports and presentations to look as good as possible for as little as possible, look into the ACER LP-75™ laser printer.

It's the first to offer complete compatibility with HP™'s line of LaserJet™ printers. With a couple of important differences. With the LP-75 you get 1.5MB of memory and full page 300 x 300 DPI graphics. Built in. Plus the industry's strongest support program. All for a price that will make your decision easy.

If you think this sounds good on paper, give us a call today. You'll find that business never looked better.

Distributed by:
Tara Enterprises, Inc.
800 541-ACER

Authorized ACER Reseller
Acer Technologies Corporation

ACER, and ACER LP-75 are trademarks of Acer Technologies Corporation. HP and LaserJet are trademarks of Hewlett-Packard Co.

ACER
ACER
ACER

APPEAL TO A HIGHER POWER.

For sheer power in a personal computer, the magic number is 386. And for ultimate value in an 80386-based PC, it's 1100. The ACER 1100.™

Because you won't find an 80386-based PC that gives you more speed, functionality or compatibility than the ACER 1100. With its 32-bit, 16MHz engine and exclusive Acer™ enhancements, it outperforms the Compaq 386.™ At less than two-thirds the price. And it's backed by the strongest support program in the business.

Call us today. Find out how appealing an ACER 1100 can be.

Distributed by:

Tara Enterprises, Inc.

800 541-ACER

Authorized ACER Reseller
Acer Technologies Corporation

ACER and ACER 1100 are trademarks of Acer Technologies Corporation. Compaq 386 is a trademark of Compaq Computer Corporation.

success, increasingly isolated in the business world of computing.

I worry about that. I hope they worry about it too. (laughs)

I know Sculley was quoted as saying that the power-users were the ones that were financing the growth of the personal computer industry, and he indicated that he wasn't concerned about the low end of the market, that he considered the Mac Plus and the Mac SE as being the low-cost Macintoshes. And looking at that, compared to low-cost MS-DOS machines, is kind of frightening to me, because I don't see how Apple Macintosh can be really competitive in small business and schools, in the same way that MS-DOS machines can be competitive.

I'm suspicious that they're still, after all these years, protecting the Apple II market by keeping Mac prices artificially high. I've made this charge before, and they deny it, but I think there's a lot of reason to suspect that that still is the case, and I believe that that could be their flaw that could come back to haunt them in the future.

That, and the other challenge that Apple has is whether or not they're going to be successful in creating a generation of computers beyond the Macintosh, which they'll have to face someday.

What do you think of HyperCard and hypermedia?

I'm a big fan of hypermedia. I think that is the key to helping us deal with the information glut.

I think there are some very exciting things about *HyperCard*. When you extend the personal computer's programming capability to where the ordinary person can program and control the computer and create applications unique to their needs, I think that is extremely good.

I think, though, that what we're going to see over the next couple of months is a lot of criticism about *HyperCard* and the way it was implemented. In other words, I don't think it's as easy as Apple would like you to think it is. I think it's complex still, I think that it's not implemented as well as it could have been, and it has some revisions to go through and some add-ons that it needs before it truly fulfills the vision. I think looking at the whole world in terms of cards is one of its limits. So certainly there's hype there, but the idea that you can begin to program the computer yourself is very exciting.

And secondly, it takes the computer beyond being a mere productivity tool — we're starting to see the computer used as a container and organizer of information. When you talk to people who've never used a personal computer before, and you say, "if you had a personal computer, what would you do with it?" — a lot of times, almost always, in my experience, they say "Well, I would put this information inside of it, and I would keep track of this information and I would use the personal computer to organize my life and my information."

And then in fact if you look at what people do with personal computers, it's nothing like that. What I like about *HyperCard* is that it sort of fulfills that vision of what people would do with a personal computer if they had one, who don't have one and don't understand it yet. So I'm hopeful that it will develop into a real powerful tool that's widely used.

Owl's Guide avoids the problem of the card metaphor.

Guide avoids that. It does fall into some pits of its own. The thing about *HyperCard* is that everybody's going to have it, but it's kind of a shame that Alan Boyd and the people at Owl Software didn't get the kind of support for *Guide* that we see for *HyperCard*.

> ***"If people don't buy Toshiba laptops because of what they did, I think they got what they deserved. But if the United States government passes the embargo, and then Apple can't get the parts it needs to sell ImageWriters, then that's really a shame, because that's really hurting Apple and it's hurting users."***

There's another product called *Zoomracks* for the PC that's very similar to *HyperCard*. I wish that some of these little guys that aren't connected to big computer companies could have a bigger presence, and could find an easier avenue for their software. I don't think we've heard the last from *Zoomracks*, or *Guide*, and I don't think we've heard the last from other kinds of hypermedia products. I think it's a very exciting category — it gets really interesting when you add CD-ROM and other optical memory products to it.

What do you think of the Toshiba scandal?

Well, I don't like what Toshiba did, so I don't have any sympathy for them. If people don't buy their products because of what they did, they get what they deserve, basically. But it was one division of Toshiba, and the people responsible have been fired, and I think someone went to jail, and I don't think they'll ever do it again. But I think it was a shame, and they made a big mistake.

I'm not really in favor of the government making some embargo against Toshiba products, because I think they're going to be punished by the marketplace. We're publishing some letters from users about Toshiba, and I'm sure it's having a big impact on them.

What impact do you see it having on people like Apple, who are very dependent on Toshiba for ImageWriters?

I hope it doesn't have a bad impact on Apple. When you say that, you're pointing out that a lot of these things are a lot more complex than they appear to be on the surface. If people don't buy Toshiba laptops because of what they did, I think they got what they deserved. But if the United States government passes the embargo and then Apple can't get the parts it needs to sell ImageWriters, then that's really a shame, because that's really hurting Apple and it's hurting people, the users of Macintoshes.

If they were ever to do anything like that again, I might support a government boycott, but not at this point. The negative press they've gotten has to be enormously damaging to their business, and they deserve it. But I like the idea that the marketplace rules, that you get rewarded or punished by the marketplace, that it's not government regulations that interfere and make the rules of the game — it's the consumers and the producers.

You recently had a conference on campus computing, which seems to be a largely uncharted terrain.

The campus market is a huge market. It's one where people can actually make money. It's not all altruistic.

It's a market that turns over every four years — you have a whole new set of customers, and all the old customers are gone. And there's a tremendous number of Macintoshes and Tandy machines and IBM machines on campus. They're being used as a productivity tool by students and faculty members, using word processing and spreadsheets and databases, much like they're being used in the business world.

There is also the workstation market on campus, and the dream of using computers to simulate experiments in chemistry, engineering, architecture, and other areas where computer simulation could be much more cost-effective than real laboratories.

There's a lot of exciting projects — Carnegie-Mellon's already networked over 5,000 personal computers on campus. You can have a personal computer in your dorm room, you can send messages to your professor, or papers, you can access the library and check out books — it's a very powerful tool.

It's a very exciting market where IBM and Apple and DEC and TI have been particularly active, but the rest of the industry has seemed to largely ignore it. So the purpose of the conference was to expose a broader range of companies and people to the possibilities of the university market, and teach them how to sell to that market, and bring them up to speed about the demographics and dynamics of the campus market.

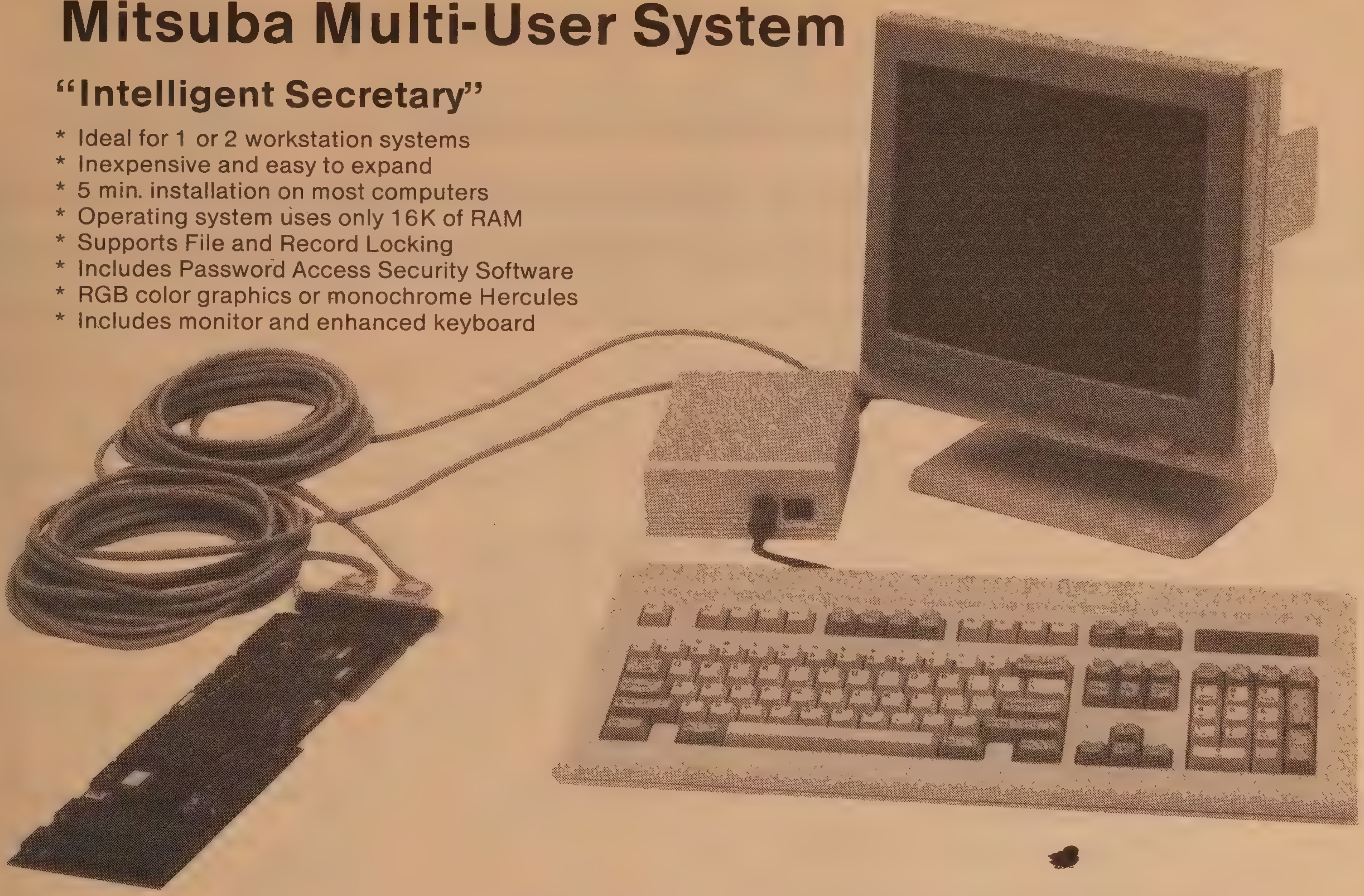
I'd like to see Microsoft be more involved in the market, I'd like to see Lotus and Ashton-Tate and all of the software and peripherals companies, the ASTs of this world, Hercules — all of them pay a lot closer attention to that market, because it's in their best self-interest to do so.

Borland is probably the most popular software on campus. One of the reasons is that it's language tools, because language programs are right for computer science students. But another reason is that Borland has been very active in creating special programs and packages for university students, where if you go into an authorized university bookstore and you have a student ID, you can buy Borland software at a discount. They have just taken a very active interest in that market, and it's paying off for them. They are making money there,

Mitsuba Multi-User System

"Intelligent Secretary"

* Ideal for 1 or 2 workstation systems
* Inexpensive and easy to expand
* 5 min. installation on most computers
* Operating system uses only 16K of RAM
* Supports File and Record Locking
* Includes Password Access Security Software
* RGB color graphics or monochrome Hercules
* Includes monitor and enhanced keyboard



Have you ever wished to expand your present PC with a multi-user system in the simplest, most economical way, that fits your budget and your LAN requirements? ***Mitsuba*** provides the perfect solution; the ***Intelligent Secretary Multi-User System.***

The Intelligent Secretary is a revolutionary multi-user system that offers easy operation; you will have nothing new to learn if you already know DOS. The system is fully compatible with IBM PC/XT, AT, 386, or compatible machines. It runs all popular PC software on the market, including RAM resident programs. ***Access Security, File Lock,*** and ***Record Lock*** are all standard features of the ***O-DOS*** operating system software, which is packaged with the Intelligent Secretary System. The Access Security System allows the System Administrator to set up to 50 user passwords. Every subdirectory can be assigned to be ***Read and Write, Read Only,*** or ***Hidden with No Access*** for each password through an easy to use menu driven program.

The O-DOS operating system lays transparent on top of DOS and manages the multi-user environment, yet occupies only 16K of RAM. The O-DOS software can support up to nine stations including the host computer, and each workstation can be as far as 200 feet away from the host without sacrificing signal quality. Each unit can have it's own AUTOEXEC. BAT and CONFIG. SYS files, independent to the host system. The Intelligent Secretary System can also be easily integrated into any PC-NET or Novell based network system.

Each workstation has it's own serial and parallel port. Users can switch to any printer or peripheral on the system by a one-touch command. The user of the host computer can also access the serial and parallel ports at the remote workstation.

Using the Mitsuba ***M710A*** or ***M710C*** monitor and enhanced keyboard instead of a terminal, the Intelligent Secretary is the only multi-user system on the market that offers Hercules resolution or color graphics for your spread sheet and CAD/CAM graphic software. Due to the multi-CPU design, the processing speed will not be reduced when several users are operating at the same time, and the Norton Utility Test shows that the system is always 2.3 times faster than the IBM PC, no matter how many users are on the system.

SALE **Get *60 MB* for *FREE.***

Archive Tape Back-Up Units

The NEW 120 MB system is now available. For a limited time, you can purchase this higher capacity unit at the same cost as a 60 MB unit.

EGA Package

Get the Mitsuba M710E EGA monitor and a 640 x 480 high resolution EGA card with 132 column drivers at a special package price. Call for details.

Mitsuba
A NAME TO REMEMBER

Mitsuba Corporation
650 Terrace Drive
San Dimas, CA. 91773
(714) 592-2866

while some of the other companies are asleep and haven't really paid attention to it. I think it's largely because Philippe [Kahn] was a professor of mathematics, and he knows about this market and he cares about it, so he's doing something about it. Which is interesting, because I think it's largely true in many companies that the chairmen and CEOs of companies, if they're interested in something, they tend to get their company involved in it, and if they're not interested or aware, they tend to ignore it.

But beyond that, there's another factor at work here, which is the fact that by and large university students and faculty are saying, we want more technology. We want more power. We want to do more things with personal computers. They are encouraging us, as an industry, to be more innovative at a time when my sense is that, by and large, the business community is saying, whoa, slow down, we have enough, we have to digest all that we have.

The innovation focus is shifting from the business market to the university market. The innovation of the future that really impacts personal computing is going to take place first in the university arena, and then it will spill over into the business and general markets. For that reason, it's critical for any company that wants to really participate in the leading edge of the technology, and wants to grow with the market and not become obsolete, to be involved with the university market. Companies that aren't involved are going to be left behind, I think.

I just find a great sense of excitement on campus and in campus computing that reminds me of the early days of the personal computer market at large, and that's why I'm excited about it. It's an opportunity to do something really useful and to elevate the standards of education, and at the same time improve the technology of the personal computer. What more incentive could we want than that?

Do you see doing a magazine around that?

That's a possibility, for sure. We don't have any specific magazine plans as of yet. It may happen — for one thing, I think students will be producing a lot more of their own newspapers and literature because of personal computers, even more than they have in the past. It's kind of neat.

Do you ever see getting into something that has nothing to do with computing?

Sure. Lots of things are of great interest to me besides computing. I'm interested in other forms of publishing, other areas — I'm interested in fashion, lifestyle, politics, newspapers (laughs). I'm interested in traveling, I'm interested in being involved with people.

I like helping people on an individual basis. I find that work that I've done at Glide Church [in San Francisco's Tenderloin district] has been very rewarding — there's nothing more rewarding in life, I think, than actually helping someone on a personal, individual basis, whether it's helping them get a job skill or helping them put food on the table or whatever it is. There's more reward in that than there is in anything else that I can think of. I have a lot of interests, I always have. I like sports, I would like to learn how to fly an airplane — I find that very fascinating.

I tend to like people in the personal computer business who have other interests. I don't really like to be in a crowd of people who just talk about personal computer technology and software to the exclusion of of everything else. I find that to be a big bore. Tech talk is not that interesting, really. I'm glad I know what I know what I know about it, and I'm proud of my participation in it and feel good about that, but I think people need to have a more well-rounded perspective and broader interests. I find the people in the personal computer industry who have a broader perspective are the ones that I'm most drawn to.

I don't know — I think it's great to be a participant in this industry, but it's not the only thing going, thank God. (laughs)

The Renaissance computerist.

Well, we are entering into an age where being a Renaissance person is very valuable, because it's useful to have lots of skills. We see that in desktop publishing — we see a merger between editing and design and writing, that suddenly one person who can write, edit and design is a very valuable person. It's a technology that brings together skills, and I think in general that's a thrust of personal computer technology is to allow people to be more diversified and well-rounded. And to value people who have the ability to learn. It's no longer possible in our world to learn something and then go through life relying on the skills that you learned in the past. You have to adapt constantly. You have to have the ability to change.

I like change, it's part of my life that I find very exciting. I'm not afraid of change, and I think too many people are afraid of change, and it can be fun. (laughs)

You can't always anticipate the ups and downs, but you have to learn how to see everything as being part of your experience, and there's always a benefit, even to some of the more dastardly things that happen to you — you usually find some silver lining. □

Buy from the LOW PRICE LEADER & Don't compromise SERVICE

LEADING EDGE
Model D
2 Dr/20Meg $799/1099
30 Meg 1149/Call
Model D2 (New) .... CALL

AT CLONE "10 MHZ" Zero Wait State
40 Meg HD-1 Meg Ram 1.2 Floppy-Monitor **$1699**

NEC
Multispeed $1269
New Blacklite (EL) ... 1559

ZENITH
LAPTOP 181 In Stock
(NEW) 183 Call for best price

HEWLETT PACKARD
HP Laser Jet II
"including toner" .. BEST PRICE
Scan Jet w/interface $1379

AST RESEARCH INC. premium 286 complete
w/20 Meg $1899
w/40 Meg 2199
w/90 Meg 2899
Includes one Meg Ram, monitor, DOS 3.2, 1.2 floppy Ser-par card, clock, calendar

IBM Personal System II
MDL 25/30 .... $1099/1299
MDL 30 w 20 Meg 1649
MDL 50/60 .... 2599/3799
MDL 80 .... Call
MDL II proprinter 399
X-24/XL-24 .... 559/729

BLUE CHIP COMPUTER BEST DEAL

COMPAQ
Portable III
Model 20 .... $3599
Model 40 4199
Portable II
Mdl. 4 Orig. 2659
Deskpro 386
40/70/130 .. 4599/5399/6499
Deskpro 286 "12 MHZ" 1899
w/20 Meg 2299
w/40 Meg 2599
Deskpro 386 "20 MHZ" New
CALL FOR BEST PRICE

Apple Macintosh
SE 2 Dr/20 Meg $2199/2649
Plus/MacII 1559/Call
II GS 1459
Imagewriter II 459

Call For Best Price

Seagate HARD DISKS
20/30/4038 .... $279/299/499

CITIZEN
MSP-10/15 .... $259/349
MSP-35 Premiere 449

VEGA
Deluxe EGA $259

Lotus
LOTUS 1-2-3 .... $299
SYMPHONY 3½" 349

SONY EGA 1302 ..... $569

EPSON
GQ 3500/EX 800 .... $1299/429
EX 1000/LX 800 ...... 529/199
FX-86E/FX-286E 329/459
LQ-800/LQ-850 ...... Call/519
LQ-1050/LQ-2500 ..... 699/899

NEC Multisync $539

TOSHIBA
3100-20 $2999
1000 $799
1200 "New" $Call
321SL $479
341SL $699

NETWORKING — DESKTOP PUBLISHING — SETUP

Consultants & Dealers Welcome

542-3501 L.A. COMPUTER CENTER 478-0768

S. BAY 17013 Hawthorne Blvd. (off 405 & 91 Fwy)

Support Service, Availability
PO's accepted. Corporate accounts welcome
full line dealer

W.L.A. 12002 Pico Blvd. East of Bundy (off 10 & 405 Fwy)

OPEN SUNDAYS 11-4

AMERICAL GROUP
The Diskette Company

100% ERROR FREE • LIFETIME WARRANTY • U.S. MAJOR MANUFACTURER

5¼″ DS/DD
25¢
EACH
DISK

Reg. 35¢
4¢ TYVEX SLEEVES
2¢ PAPER SLEEVES
1¢ COLOR CODED LABELS
(Minimum 200)

5¼″ DS/DD
IN WHITE BOX
32¢ EACH

DISKETTES ARE IN BOXES OF 10
Included: Anti Static Sleeves, Labels, Tabs with Hub Rings.
(Minimum 100 disks or 10 Boxes)
Lots of 350 . . . . .30¢ ea

COLOR 5¼″ DS/DD
UP TO 16 DIFFERENT COLORS
44¢
EACH

Inc.: Tyvec Sleeves, Color Coded Labels and Tabs. Rainbow Pack Available. Colors: L. Blue, M. Blue, D. Blue, Gray, Red, Pink, Brown, Beige, Burgundy, Yellow, White, Orange, Green, Lavender, Silver* & Gold*

5¼″ DS/HD
90¢ EACH
High Density For IBM AT and Comp.
Comes w/Tyvec Sleeves, Labels & Tabs, Black

(For 720K Drive, Holds 1.2 MB)
Know your HD's

High Density—Blue Disks
Blue Jacket . . . . .99¢ Each
Inc.: Tyvec Sleeves, Labels & Tabs.
Dysan DS/HD . . . . $\$14^{40}$
(Box of 10) Min. 10 Boxes
Athana HD 1.2 MB (Box of 10). $12

3½″ DS/DD
- WITH LIFETIME WARRANTY
- 100% ERROR FREE

99¢ EACH

IN PACKS
OF 25
Reg. $\$1^{29}$

3½″ Colored . . . . $\$1^{35}$ ea.
(Red, Yellow, Green & Orange)
(min. 30 10 or each color)
3½″ Colored Coded Labels. . . . . .40¢
(pack of 10)
3½″ HD (IBM PS/2) . . . . $\$3^{95}$ ea.

5¼″ DS/DD OUR STANDARD PRODUCT
TYVEC SLEEVES, COLOR CODED LABELS, HUB RING AND TABS INCLUDED

$35
EACH

PER 100
Reg. $48
IN PACKS OF 10, BOX OF 100
(Minimum 100)

5¼″ Diskette Storage
DD 100L Hold 100 Disk w/Lock. . . . . $\$8^{95}$
DD 120L Hold 120 Disk w/Lock. . . . . $\$11^{95}$
DX-100B Hold 100 Disk Side by Side. . . . . $\$9^{95}$

3½″ Diskette Storage
SS40 Hold 40 Disk . . . . $\$6^{95}$
SS50 Hold 50 Disk w/Lock . . $\$9^{95}$
DD80L Hold 80 Disk w/Lock $\$11^{95}$

wabash DATATECH
3½″ DS-DD (in box of 10). . $\$10^{95}$
5¼″ DS-HD 1.2MB (in box of 10) . . . . $\$9^{95}$

AMERICAL GROUP
The Diskette Company

(818) 906-1132
SAME DAY SHIPPING
Dealer & Quantity Prices Available

1. Purchase orders accepted from: Fortune 500 firms, colleges, schools, government and state organizations.
2. All other orders are C.O.D. or Prepay
3. NO returns without our authorization
4. Every product fully warranteed through Americal Group
5. On large orders—CALL US FOR A QUOTE

Now Accepting
VISA
master charge

C.O.D./Pick Up/VISA/MC
Send your order with check to:
AMERICAL GROUP
14200 Ventura Blvd., Ste. 201
Sherman Oaks, CA 91423
ADD $\$3^{00}$ Shipping for first 100 Disks and $\$1^{00}$ every 100 THEREAFTER
CALIF. RESIDENTS ADD 6½% SALES TAX.

Palantir Software

Windowing Its Way To Success

By Serge Timacheff

After waiting a long seven years in the dugout, it's finally Palantir Software's turn at bat. After ages of CP/M and DOS word processing, followed by a short romance with the Macintosh, this small Houston publisher may have carved out a niche in the industry as a *Windows* pioneer.

"What we have done," says President Dennis Bilbe, "is taken a group of packages and used Microsoft *Windows* to integrate a full range of functions. In this way, we have a full office automation concept." Bilbe, a former Price Waterhouse MAS manager, took over Palantir shortly after its creation, driving it to its present status. The Palantir/*Windows* list will include about eight packages, with applications including a word processor, a spreadsheet, graphics, a graphics scanner, a scheduler, a spelling checker, a database/filing system, and a communications program. Two of the products, *Windows Filer* and *inTalk* (communications), are presently available nationwide.

The company's entire effort now focuses on *Windows,* and consequently relies upon Microsoft's success with the product. With about 850,000 *Windows* units sold after less than two years on the market, it is already considered a success. Palantir has worked closely for two years with Microsoft to produce a series of products under *Windows* that interact with each other, as well as with *Windows* products from other developers. The risk of moving the company totally in this direction may be well worth it.

Palantir has used the windowing concept to create a system with everything the office worker could need. Every product in the series can stand alone or integrate with any other, with data transferred between applications using Windows' dynamic data exchange system.

STANDARDIZATION AND INTEGRATION? WHO WOULD HAVE BELIEVED. . .

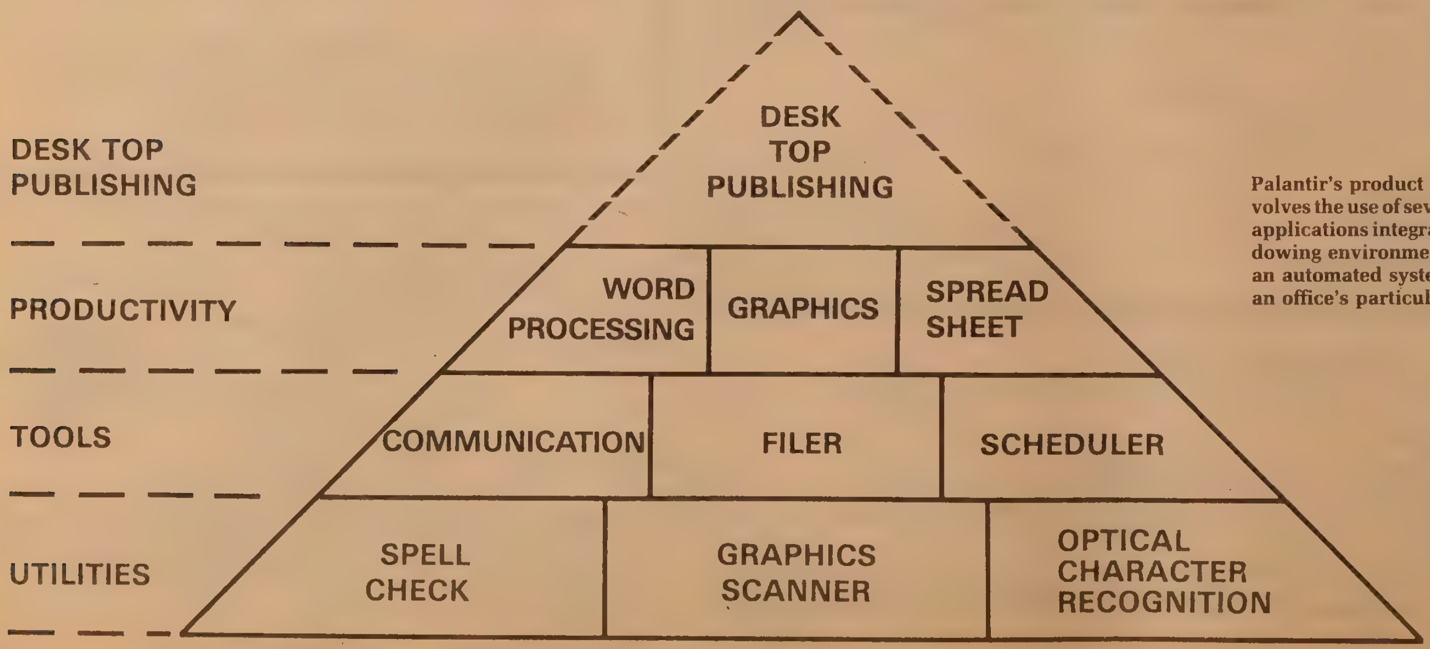
Windowing in general is nothing new. Simply, it allows access to one or more programs while immersed in another. In this way, the PC becomes a "work station," performing a variety of tasks simply and quickly. Using a mouse to point and click, *Windows'* multitasking capabilities let different programs run virtually simultaneously in active or inactive windows. Different programs can share files and execute parts of each other.

Palantir has used the windowing concept to create a system with everything the office worker could need. Every product in the series can stand alone or integrate with any other, with data transferred between applications using *Windows'* "DDE," or "dynamic data exchange" system. For example, Palantir's *Wintex Word Processor* can start MicroGrafix's *Windows Graph* package, passing data to it and creating graphs. DDE allows independent software developers to write programs that work harmoniously with anyone else's.

During the past 18 months, Microsoft has operated through a combination of targeted, strategic independent software developers to get an in-depth coverage of *Windows* and to stimulate product development. Microsoft Systems Marketing Director Russ Werner calls it "acting in an evangelical mode." He adds that "for the broad base of developers with an interest in *Windows,* we hold a series of seminars to give them exposure to the environment and training in it." Both of these methods serve to fulfill Microsoft's aggressive promotion policy, and the company now sells more than 12,000 *Windows* "software development kits" yearly. Werner perceives this as "a tremendous surge in interest from the development community as a result of the market size and the emergence of some key products." Additionally, IBM's recent endorsement of the *Windows* interface for Operating System/2 has helped greatly.

A NATURAL PROGRESSION FOR PALANTIR

Automation and product integration are concepts Palantir has pushed since its humble beginning in 1980. Palantir added an automated filing system and a spelling checker to its CP/M and DOS word processors, all programmed in C, the language of today's *Windows* products. Michael Griffin, Palantir's lead programmer in the early years, perceived C to be the language of the future, which



Palantir's product strategy involves the use of several specific applications integrated in a windowing environment to create an automated system that suits an office's particular needs.

Double the Value, Double the Savings!

★ Two Locations to Serve You ★

XT Basic Turbo

$469 complete

- 8088-2 CPU • 4.77/8 MHz Turbo Switchable
- 256K RAM on 640K Board • Hi-res TTL Monitor
- 1 - 360K Floppy Drive w/controller (Japanese drive)
- Mono Graphics Card (Hercules compat.) w/Printer Port
- AT Jr. Style Case (Keylock, 3 LED's)
- AT Style Keyboard • 150 Watt Power Supply
- 48 Hr. Burn In • 1 Year Warranty Parts & Labor

30 MB XT Turbo

$895 complete

- 30 MB Seagate Hard Drive • W.D. Controller
- 640K 8 slot Turbo Motherboard
- 4.77/10 MHz Front Panel Switchable
- 1 - 360K Floppy Drive • Hi-Res TTL Monitor
- Hercules Compatible Graphics Card w/parallel port
- AT Style Case • AT Style Keyboard
- 150 Watt Power Supply • 48 Hr. Burn In
- 1 Year Warranty Parts & Labor

286 AT Turbo

(6/10 MHz - 20 MEG)

$1249 complete

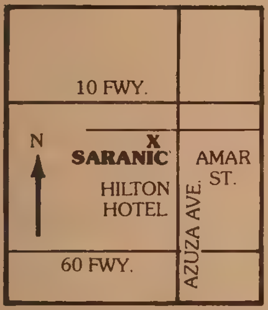
- 20 MB Seagate Hard Drive
- 640K RAM exp. to 1 MB • 80286 Motherboard
- 6/10 MHz Switchable • 1.2 MEG Floppy Drive
- Western Digital WA2 Controller
- TTL Monochrome Monitor • 200 Watt Power Supply
- Hercules Comp. Monographics Card w/printer port
- AT Style Case • AT Style Keyboard

XT OPTIONS:

2nd Floppy Disk Drive	$80
CGA Color (Monitor & Card)	ADD $200
EGA Color (Monitor & Card)	ADD $400
Multi I/O Card (clock/cal/serial/game)	$50

AT OPTIONS:

CGA Color (Monitor & Card)	ADD $200
EGA Color (Monitor & Card)	ADD $400
20 MEG to 70 MEG Hard Drives	Call for Latest Prices



PRINTERS & MODEMS:

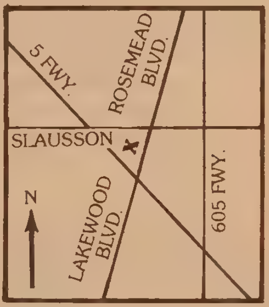
Panasonic 1080i	$199
Star NP 10	$179
Panasonic 1091 Model 2	$259
SMART ONE 1200 Baud Internal	$95

Custom Software Available

SARANIC COMPUTER CORP.
525 N. Azuza Ave., #108
La Puente, CA 91744
(818) 333-8708

DEALERS: CALL FOR QUANTITY PRICES.

L.E.D. COMPUTERS
8407 S. Rosemead Blvd.
Pico Rivera, CA 90660
(213) 862-8563



XT-TURBO

MONO: **$565**
COLOR: **$747**

- 4.77/8 MHz Turbo M. Board
- 640K on Board
- Two 360K Floppy Drive
- 150W Power Supply
- Case
- 5060 AT/XT Key Board
- Floppy Disk Controller
- Video Card
- Printer Card
- Monitor

AT-TURBO

MONO: **$999**
COLOR: **$1179**
EGA: **$1359**

- 6/10 MHz AT M. Board
- 1M RAM on Board
- 1.2M Floppy Drive
- 200W Power Supply
- Case
- 5060 AT Key Board
- WA2 Card
- Video Card
- Monitor

LOCAL AREA NETWORK CARD	CALL
4 Serial Card (II option)	75
2.5M RAM Card	70
1.2M FDC Card	35
AT Multi I/O Card	50
Multi User Card	79
2M EMS/LIM (AT)	79
2M EMS/LIM (XT)	71
MGP Card	40
CGP Card	40
RS 232 Card	21
Game Card	15
Printer Card	15
Buffer Printer Card	49
AD/DA Card	70
576 RAM Card	27
Logic Tech Mouse	72
1200B Smart 1 Modem	72
1.2 Multi I/O Card AT/XT	75

P.C. HOME
SKYPARK CIRCLE
IRVINE, CA 92714
(714) 261-8731, 261-8730

ultimately contributed to his success. He had written *Magic Wand*, one of the most popular early word processors and the forerunner of *PeachText*. Griffin led Palantir through the "rough" years before finally signing with Compaq in Houston.

The *Word Processor*, *Filer*, and *Speller* combination became Palantir's *Office Series*. The three operated independently and together in a low-level form of software product integration, and *Word Processor* especially developed an almost cultish following worldwide. Producing Macintosh products was the company's first venture into a windowing atmosphere and continued its growing policy of becoming a software publisher instead of developer. It chose financial, communications, and educational products, hoping the Macintosh would quickly penetrate a variety of markets.

"We kind of guessed wrong on the accounting and educational," says Bilbe, "but the communications is an outstanding product, and what we did in the windowing environment was to migrate to *Windows*. We've approached windowing in at least three different ways. We've taken a Macintosh product, *inTalk*, and converted it to *Microsoft Windows*, so they essentially run the same way. We've taken *Windows Spell* and written it from scratch and, in reverse, we took it and brought it back down into DOS. The third way is that we've used the *Word Processor* and a spreadsheet written in UNIX and brought them to *Windows*."

Bilbe says the change occurred as a marketing decision after a careful review of everything happening in the software industry. "We decided that a windowing atmosphere would prevail. The faster the computers get, the more friendly the software has to be. Also, people have been trying for years to get a real office automation system put together. We've finally done it."

Palantir estimates a six month lead on other *Windows* developers. Although the company's still trying to secure proprietary names for some of the products, the software is basically ready to go. "We've taken products that are either pre-beta or beta ready," says Bilbe, "finish the marketing design, and work with the developer to get the product out on the street. I don't think any competition will roll out any sooner than the first quarter of next year. Even as it is, we're still the largest—next to Microsoft—publisher of *Windows* software. I don't think Lotus, Ashton-Tate, or any of the big ones will switch over now. They already have too much inertia, and they currently have enough to contend with. Eventually, they'll have to switch to the windowing environment, but they don't have to do it now."

Microsoft supports Palantir's publishing efforts by directing *Windows* developers to them. "We're all for Palantir," says Russ Werner, "and I think it's terrific. *PageMaker* probably kicked off the 'wave,' but Palantir is second in line as a key software vendor coming out with a major set of applications." Werner believes Palantir is ahead of other publishers in getting *Windows* applications to the user. "Overall, it's a strong position to be in, in a market where market share can be had. There's some value to being the first one in and being aggressive; just like the Mac, certainly it's a better place to be than 5000th in the pack." He added that *Windows* products are on the verge of deluging the market. "It's really amazing what's going on. The Mac took about two years for good applications to come out for it in a broad sense. We're almost at the two year mark for *Windows*, and by January of '88 and even this fall, some key applications will be out."

Palantir's Dennis Bilbe: "We decided that a windowing atmosphere would prevail. The faster the computers get, the more friendly the software has to be.

ANOTHER PALANTIR EDGE—THE INTERNATIONAL MARKET

Five of Palantir's new *Windows* products come from European developers, two from Switzerland and three from France. In the past, Palantir has attempted to provide its DOS and CP/M *Word Processor* to other countries, which established international connections other software firms have never developed. Even its unsuccessful Macintosh financial/accounting package was made by a software developer in New Zealand. According to Bilbe, "the international aspects of Palantir are an integral part of our business plan." With systems becoming increasingly standardized the world over, Palantir feels it is obtaining an edge over other US software publishers by addressing a world market. Currently, at least some of Palantir's products are available in Chinese, Korean, English, Japanese, Arabic, German, French, Spanish, and Russian. When all of the languages and sublanguages (such as Canadian French) are totaled, more than 42 languages are supported.

Bilbe plans to continue expanding international ties, and has now opened Palantir offices in Paris, London, and Seoul, in addition to the older Houston and Washington, D.C. locations. Permanent representatives work in Tokyo and Montreal. "Our programs from France, for example, are actually written in French. I had to have them translated into English here in the US because everything, message- and text-wise, is in separate resource files. All we have to do is translate them, avoiding having to recompile the whole program. All we really have to worry about is message and prompt files."

In the Orient, Palantir is working with the Japanese to get its *Windows* system operational. NEC has *Windows* in Japan, and Palantir now has a company there called System Soft that has agreed to market Japanese *Windows* products.

Palantir continues to accept programs for evaluation from developers. Bilbe's main acceptance constraints are that the software must conform to *Microsoft Windows* rules and it must have an office automation application. "It also has to be a program or an idea that's good worldwide. If it's only good for one specific country, then we're probably not interested."

Palantir's international plans in many ways parallel those of Microsoft. As much as 40% of Microsoft's focus is on the international market, while most similar companies limit their attention to 20% or less. The *Windows* device drivers, in particular, are well suited to international software creation and use, and Microsoft has built in international settings so that it becomes an easy, good development platform.

THE PRODUCTS

Most of the new Palantir products have been demonstrated at shows around the United States this summer, such as the Microsoft/Aldus Desktop Publishing shows in New York and Los Angeles. The major product release is scheduled to take place at COMDEX Fall, along with some new products the company won't reveal now. Palantir's primary task at these shows is to demonstrate how its communications package, *inTalk*, can transfer *PageMaker* files created either on the Macintosh or the IBM to one another.

inTalk is the only communications package that resides on both systems. Earlier this year, *inTalk* was used to transfer a 23K *Pagemaker* file from Stanford to Tokyo, which it did in about 4½ minutes. Palantir wants *inTalk* to become a viable alternative to the FAX. A terminal emulator, *inTalk* allows communications to mainframes, minis, or other micros, regardless of the system type. "As long as you can get it over the telephone, we can talk to it," says Bilbe. It also allows graphics downloading, like you get from such services as CompuServe.

Windows Filer, released the same day as Microsoft *Windows*, is a filing and reporting system allowing use of graphics created in any *Windows* paint/draw package. The Palantir graphics package will work well, and is comparable to *SuperPaint* on the Macintosh. Separate from the graphics is the scanner, which will allow the use of a Datacopy or Microtek scanning device to pull hardcopy graphics into a soft format.

The spreadsheet is similar to *SuperCalc* or *MultiPlan*, but rather different from *Lotus*. What's the advantage? "It windows. That's the major advantage right now. Everything is done in one environment—you don't have to switch out and back in," says Bilbe.

The word processor features compare with *Word*, and the speller has 65,000 words and uses algorithms in correction. Currently Palantir has the speller active in 11 different languages.

The scheduler/agenda package is a mini database allowing the user to keep track of all appointments past and future. It opens multiple files, giving instant representation of what must be done for a time period. It also schedules non-human events, such as billboards or commercials.

The only type of office-related product Palantir won't touch is desktop publishing, according to Bilbe. "We're leaving that to Aldus and Ventura. If you do a marketing triangle, desktop publishing is right there at the top. Under that is what I call productivity software, which includes products such as word processors, spreadsheets, and possibly graphics. Beneath those are tools, like communications and *Windows Filer*, and at the bottom are utilities like the speller, the scanner program, and others."

The products will sell independently for $200 to $500, except for the spelling checker, which sells for about $100, through normal retail channels.

A CHANCE AT LAST?

Palantir has worked since 1980 to be a major player in the software industry, and at long last it looks as though they may be in just the right position. A greater international focus is taking place, and the windowing concept is hitting the DOS environment hard.

To grow, companies must learn from their mistakes. A few years ago, Palantir's main goal was to convince users that the *Palantir Word Processor* was easier and more powerful than *WordStar*. Whether it was or not is a moot point, because they never overtook *WordStar*'s popularity, nor did anyone else. Palantir's biggest problems rose out of trying to wrestle a massive giant to the ground at the height of his success.

Now, however, Palantir's different ploy of working with a major producer such as Microsoft has generated tremendous support and recognition. Its timing is good, because no one has established themselves as the *Windows* market controller. For Palantir, this means its turn at bat just might knock the ball over the fence. (Palantir, 713/955-8880.)☐

Copyright ©1987 by Serge Timacheff. All rights reserved.

Comdex Clearance

Save Up To 35% On All Systems Now!!

We Must Make Room For Our New Comdex Shipments!

12 MHz 40 MB Super AT

- Norton S.I. 13.3
- Intel 80286-10 CPU
- Up to 12 MHz Keyboard/Hardware switchable
- 512K RAM exp. to 1 MB on board
- 40 MB Seagate Hard Disk
- 1.2 MB Floppy Drive
- 200 Watt Power Supply
- Parallel Printer Port
- Hi-Res amber monitor
- NCL FDD/HDD Controller
- Herc. compatible graphics card
- AT Keyboard/AT Case
- Assembled & Tested
- 1 Year Labor/6 Months Parts Warranty

$1379

Mfg. List $2100

10 MHz 20 MB XT Turbo

$799

Mfg. List $1100

Features:

- 4.77/10 MHz Switchable
- 640K on motherboard
- 20 or 30 MB Seagate HD w/contrl.
- 150 W Power supply
- Parallel printer port
- Hi-Res amber monitor
- Herc. compatible graphics card
- 360K Floppy Disk Drive w/FDC
- AT Keyboard/XT Case
- Assembled & Tested
- FCC Approved Class B
- 1 Year Labor/6 Months Parts Warranty

Option to Either System:

For 4.77/8 MHz Switchable. . . . . . **CALL**

10 MHz 30 MB XT Turbo

$859

Mfg. List $1200

Additional Options to All Systems

For CGA Color System add **$175**

For EGA Color System add **$389**

Attn: Dealers
Call for Quantity Pricing

SMART EGA Card **$195**
100% Genoa EGA Compatible (800 X 600)

SUPER EGA Card **$135**
600 X 480

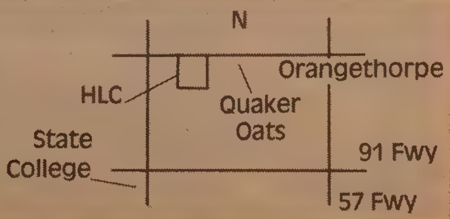
6/8/10/12 MHz AT Motherboard
(0 K, w/ BIOS & CPU)
640/384 Partitioning **$295**

Protect All Your Data w/ Uninterrupted Power Supplies by DataSafe

For XT: 300 VAC	**$209**
For AT: 500 VAC	**$309**
For Network Servers: 1000 VAC	**$CALL**

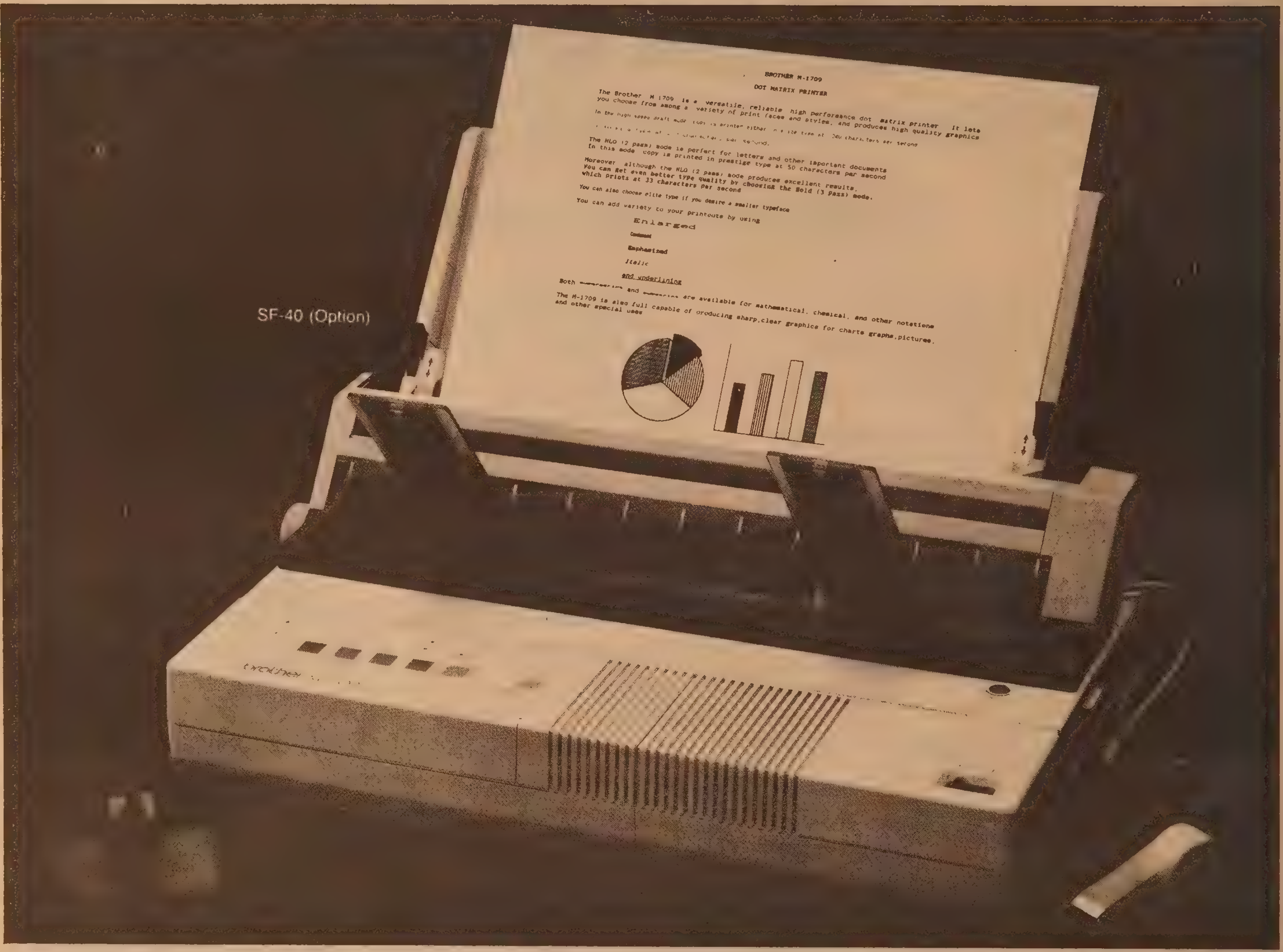
HLC Computers
2467 East Orangethorpe Ave.
"Cedarwoods Business Park"
Fullerton, CA 92632

(714) 871-6400
Fax: (714) 773-5156



Prices subject to change w/o notice.

Meet the quick change artist. From brother®



BROTHER M-1709

DOT MATRIX PRINTER

The Brother M 1709 is a versatile, reliable high performance dot matrix printer It lets you choose from among a variety of print faces and styles, and produces high quality graphics

In the high speed draft mode copy is printed either in [illegible] size type at 240 characters per second [illegible]

The NLQ (2 pass) mode is perfect for letters and other important documents In this mode copy is printed in prestige type at 50 characters per second

Moreover although the NLQ (2 pass) mode produces excellent results, You can get even better type quality by choosing the Bold (3 pass) mode, which prints at 33 characters per second

You can also choose elite type if you desire a smaller typeface

You can add variety to your printouts by using

Enlarged

Condensed

Emphasized

Italic

and underlining

Both [illegible] and [illegible] are available for mathematical, chemical, and other notations

The M-1709 is also full capable of producing sharp,clear graphics for charts graphs,pictures, and other special uses

The M-1709 dot matrix printer.

When we call the M-1709 dot matrix printer quick, we're not just talking about its hot 240 cps top speed. This easy-handling, value-packed 136-column printer does everything fast.

- Presto. A unique "paper parking" feature changes from feeding forms to feeding bond in seconds...without removing the tractor feeder.
- Chango. Go from draft to NLQ at the flick of a button. Opt for a full range of type styles. Select 10 or 12 pitch, condensed or proportional type. Or add bold, underlining, super/subscript and more.

The compact M-1709. It's the quick change artist of the year.

EASTERN ENTERPRISES, INC.

Mass Merchandising Since 1969

6001 BANDINI BLVD., LOS ANGELES, CA 90040

(213) 725-3080

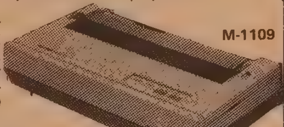
VISA

MasterCard

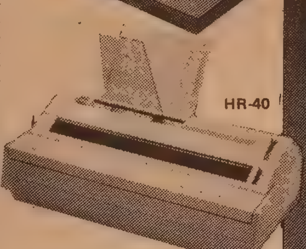
AMERICAN EXPRESS

brother Printer Sale!

Brother printers are known for their reliability, performance and versatility. Presented here are a few state-of-the-art printers for your word processing and data processing needs. Let Brother put your reputation on paper!

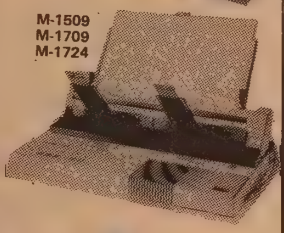


M-1109 — 100cps, 80 column printer with near letter quality mode. 2K buffer. Compact (13"x2.8"x7.6") & lightweight(7.8 lb.) design. Ideal for use with portable or lap-top computers. Complete with tractor . . .$219



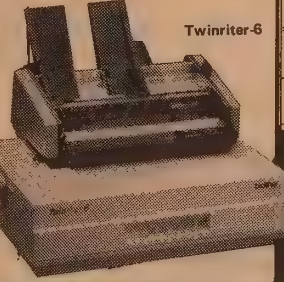
NEW! HR-40 — A high speed daisywheel printer that make you look good on paper. 40cps, 136 column. Built in push-type tractor would not waste the first form. Built-in single-sheet feeder makes it the best price-performance daisywheel printer. A unique paper parking feature lets you insert single sheet without removing continuous form. A truly outstanding value at. $889

M-1509 — Our best seller! 180cps (45 cps NLQ), 136 column. Unique side-mounted cable connection would not tangle form paper and push-type tractor would not waste the first form. Single push button for near letter quality printing. 3K buffer. IBM & Epson compatible. Parallel & serial I/F $389



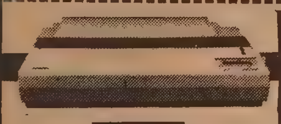
M-1709 — It has features similar to 1509 but high speed 240cps (50cps NLQ), 136 column, large 24K buffer. Unique push-type tractor and paper parking features. Heavy duty printhead for business use. Quiet . . .$489

NEW! M-1724 — A truly versatile text and graphic printer with its 24-pin head and 216cps output (72cps NLQ), 136 column. Advanced paper parking feature lets you switch to single sheet without removing the continuous forms. IBM, Epson, Diablo compatible. . . . . $CALL



NEW! Twinriter 6 — If you believe 2 heads are better than one, this is it! The dot matrix head creates crisp graphics and prints draft text at 200cps and its daisywheel prints letter quality text at 36cps. Compatible with the new integrated text/graphics software such as Lotus & Framework. Parallel interface . . . . $CALL

Twinriter-5 — above but 140cps dot matrix. Close-out special $749

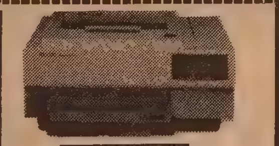


EPSON

LX-86 — 120cps, 80 col	$179
FX-86E — 240cps, 80 column. .	$315
FX-286E — 240cps, 132 column	$499
EX-800 — 300cps, 80 col. . . .	$410
EX-1000 — 300cps, 132 col.. .	$569
LQ-850 — New! 24-pin , 80 col	$546
LQ-1050 — New! 24-pin, 132 col	$759
LQ-2500 — 324cps, 132 col..	'$989

HOMEWRITER 10

Dot matrix printer with near letter quality printing at a home budget price. 100cps draft speed, 80 column.
List $299 *Special* **$139**



HEWLETT PACKARD

H-P Laserjet Version 2 $1,695

CITIZEN

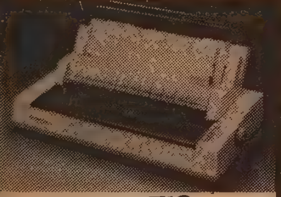
MSP-10 — 80 column.	$269
MSP-15 — 132 column	$359
MSP-20 — 80 column.	$325
MSP-25 — 132 column	$475
Citizen Premium 55 Printer . .	.$595
Citizen Tribute 224, 24-pin . .	.$695

NEC

P660 Printer, 216cps, 80 col . .	.$499
P760 printer, 216cps, 132 colum	$699

TOSHIBA

P321SL Model 2 — 24-pin head, built-in tractor.	$499
P351 Model 2 — 288cps, 132 col	$899
Toshiba P341SL w/tractor. . .	.$689



FORTIS

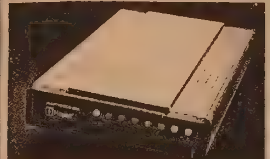
Fortis DM-1310—130cps (33cps NLQ), 80 column	.$245
Fortis DM-2010 — 200cps, 50cps NLQ, 80 colum, emulates Epson FX-286 and IBM graphics printer. .	$CALL
Fortis DM-2015 — Similar to DM-2010 but 130 column	$CALL
Fortis DM-20 — 160 cps dot matrix, 136 col., NLQ mode, both parallel and serial interfaces.	$499
Fortis DX-25 — 25cps daisywheel, 132 column, 7K buffer, quiet operation, built-in parallel & serial. . . .	$399

OKIDATA

192+ 160 cps, 80 col. Parallel .	.$375
193+160 cps, 136 col. Parallel. .	$499

STAR GEMINI

SB-10, 24-pin, 80 column	$375



Modem Sale!

AST 1200B internal modem w/side-kick & CrossTalk limited qty..	$149
Everex 1200B Int. modem. . .	.$105
Everex 2400 External modem.	.$275
Hayes 1200 J xternal modem .	.$329
Hayes 1200B Int. w/Smartcom	.$329
Hayes 2400 External modem .	.$485
Hayes 2400B Int. w/Smartcom	.$485
Prometheus 1200 Ext. modem	.$249
Prometheus 1200B Int.w/Mirror	$169
Smart One 1200B Int. modem .	$99
U S Robotics 1200B Int. Modem	.$99
U S Robotics 1200 Ext. Modem	$135
U S Robotics 2400 Int. Modem	.$195
VenTel 2400 Internal.	.$399

(Monitor Optional)

ENTERPRISE

ENTERPRISE XT-TURBO

- Fully IBM PC/XT compatible
- 30-day money-back guarantee
- 640K on mother board
- 8 expansion slots
- 84-key keyboard with LED's
- Keyboard speed selectable from 4.77 MHz to Turbo speed
- 150-watt power supply
- Floppy disk controller included
- Parallel printer port included
- Serial port included
- Game port included
- Clock/calendar w/battery backup
- Compatible w/EGA, CAD CAM, and networking systems

	640K memory 1-360K drive	640K memory 2-360K drives	2-360K and 20-MB Drives	2-360K and 30-MB drives
8MHz	$475	$575	$915	$955
10MHz	$515	$615	$955	$995

(Monitor Optional)

ENTERPRISE 286

- Fully IBM AT compatible
- 512K memory — expandable to 1-MB
- Controller for floppy & hard disks
- 1.2-MB floppy drive
- 101-key enhanced keyboard w/LED's
- Clock/calendar with battery backup
- Keyboard speed selectable from 6MHz to Turbo speed
- 200-watt power supply
- 8 expansion slots
- Full 1-year warranty

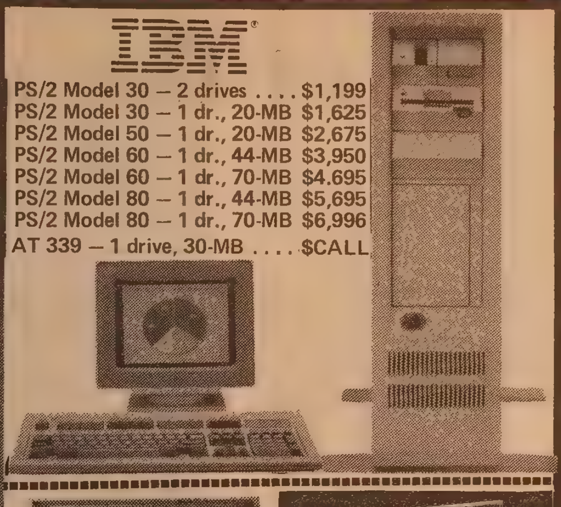
	512K memory 1 floppy drive	512K memory 2 floppy drives	2 floppy and 30-MB drives	2 floppy and 40-MB drives
10MHz Mini size	$889	1009	1539	1685
10MHz Full size	$899	1025	1550	1699
12MHz Mini size	$949	1075	1585	1745

360K Drive for PC/XT (black) .	$99
360K Drive for AT (grey) . . .	.$109
1.2-MB Drive for AT (grey) . .	.$145
SONY 3½" 720K drive.	.$135
Toshiba 3½" 720K drive	.$135

IRWIN TAPE BACKUP

Irwin 110,10-MB Internal Unit	.$269
Irwin 120, 20-MB Internal Unit	.$379
Irwin 145, 40-MB Internal Unit	$409
Irwin 20-MB External for XT .	.$595
Irwin 20-MB External for AT .	.$659

IBM®



PS/2 Model 30 — 2 drives	$1,199
PS/2 Model 30 — 1 dr., 20-MB	$1,625
PS/2 Model 50 — 1 dr., 20-MB	$2,675
PS/2 Model 60 — 1 dr., 44-MB	$3,950
PS/2 Model 60 — 1 dr., 70-MB	$4.695
PS/2 Model 80 — 1 dr., 44-MB	$5,695
PS/2 Model 80 — 1 dr., 70-MB	$6,996
AT 339 — 1 drive, 30-MB	$CALL

COMPAQ

Portable 2, 256K, 2 drives	$1950
Portable 2, 640K, 20-MB.	$2795
Portable 3, 640K, 1.2-MB	$3395
Portable 3, 1.2-MB & 20-MB. . .	$3995
Portable 3, 1.2-MB & 40-MB. . .	$4295
Despro 256K, 2 drives	$1095
Despro 286 12-MHz,256K,1 drive	$1995
Despro 386, 1.2-MB & 40-MB . .	$4450
Despro 386, 1.2-MB & 70-MB . .	$5150
Despro 386, 1.2-MB & 130-MB .	$6450

LAP-TOP COMPUTERS

Toshiba T3100/20 with 20-MB hard disk	$CALL
Toshiba T1000 — 512K, 1 drive.	$Call
NEC Multi-speed — 2 drives battery operated, LCD screen.	.$Call
NEC Multispeed EL— similar to above but with back light	$1,750
Datavue Spark Laptop, 640K, 2 drive with back light screen . . .	.$1450

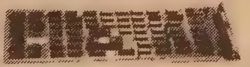
MONITOR SALE

MONO COMB...*complete*	$150
RGB COMBO....*complete*	$300
EGA COMBO ...*complete*	$500

Amdek 410A Amber w/base. .	.$169
Amdek 722,RGB Color Monitor	$535
IBM 8503 — 12" B/W Monitor	.$225
IBM 8512 — 14" Color Monitor	.$549
IBM 8513 — 12" Color Monitor	.$625
NEC JC1401P — 14"Multisyn	.$549
PGS SR-12 — PGA Color. . Sale	$495
Roland 142 — Black/White . .	.$259
Samsung 12" Amber w/o base. .	$89
Samsung 12" Green w/o base . .	$85
Samsung 12" Amber w/base. .	.$109
Samsung 12" Grenn w/base . .	.$105
Samsung 14" RGB w/base . . .	.$275
Samsung 14" EGA Color. . . .	.$385
Taxan 650 — 12" RGB Color .	.$499
Taxan 760 — 14" EGA Color .	.$485
Taxan 770 — Multisyn Color .	.$545
Thompson 14" RGB Color . .	.$289

AST 286

CALL FOR BEST PRICES!



Monographics Card w/parallel . .	$89
Color graphics Card w/parallel. .	$85
Generic EGA Card	.$145
Orchid Tiny Trubo 286	.$295
RS-232Serial Card	$29
Parallel Printer Card	$25
Vega EGA Card	.$199
Vega Deluxe EGA Card	.$275
IBM Monochrome/Printer Card	.$189
IBM Floppy Disk Controller. . .	$79

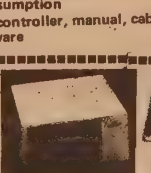
HARD DISK SALE!

New Low Prices!

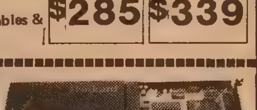
- Half height internal hard disks for IBM-PC, XT and Compatibles.
- Boots directly from had disk
- Low power consumption
- Complete with controller, manual, cables & mounting hardware

20—MB	30—MB
$285	$339

IOMEGA BERNOULLI BOX



10+10-MB	--$1395
20+20-MB	--$1775
Non-bootable interface card . . .	$150
Bootable interface card.	$205



Plus System Hardcards

20-MB Hardcard, slim design .	.$665
40-MB Hardcard, slim & fast. .	.$865

All goods are brand new and guaranteed. All advertised prices already include a 2% cash discount for full payment by cashier's check, money order or cash. Personal or company checks must clear 3 weeks before we ship. Add 2% for credit card purchases. COD's are accepted for UPS shipments only and require 20% paid deposit and $3 COD fee. No COD's to Canada, Puerto Rico, FPO/APO or P.O. Boxes. Shipping & insurance charges by UPS Ground: $5 (card/modem/drive/software), $10 (monitor/printer), $15 (computer/plotter), $25 (laser printer/UPS/copier). UPS Blue: 3X Ground. UPS Red: 4X Ground. P.O.'s accepted from government agencies, Fortune 1000 firms and major institutions. Calif. buyers add sales tax. Prices subject to quantity available, correction or change without notice. You may call for the latest prices.

EASTERN ENTERPRISES, INC.
Mass Merchandising Since 1969
6001 BANDINI BLVD., LOS ANGELES, CA 90040
COME VISIT OUR GIGANTIC SHOWROOM & STORE

VISA
MasterCard
AMERICAN EXPRESS

TOLL—FREE (ORDERS ONLY) **(800)392-7081**
Hours: Monday to Friday 8:30am - 5:00pm Pacific Time
Calif., Alaska & all info *Call* (213)725-3080
FAX: (213)838-5301

IBM PC, XT, AT are registered trademarks of International Business Machines Corp.

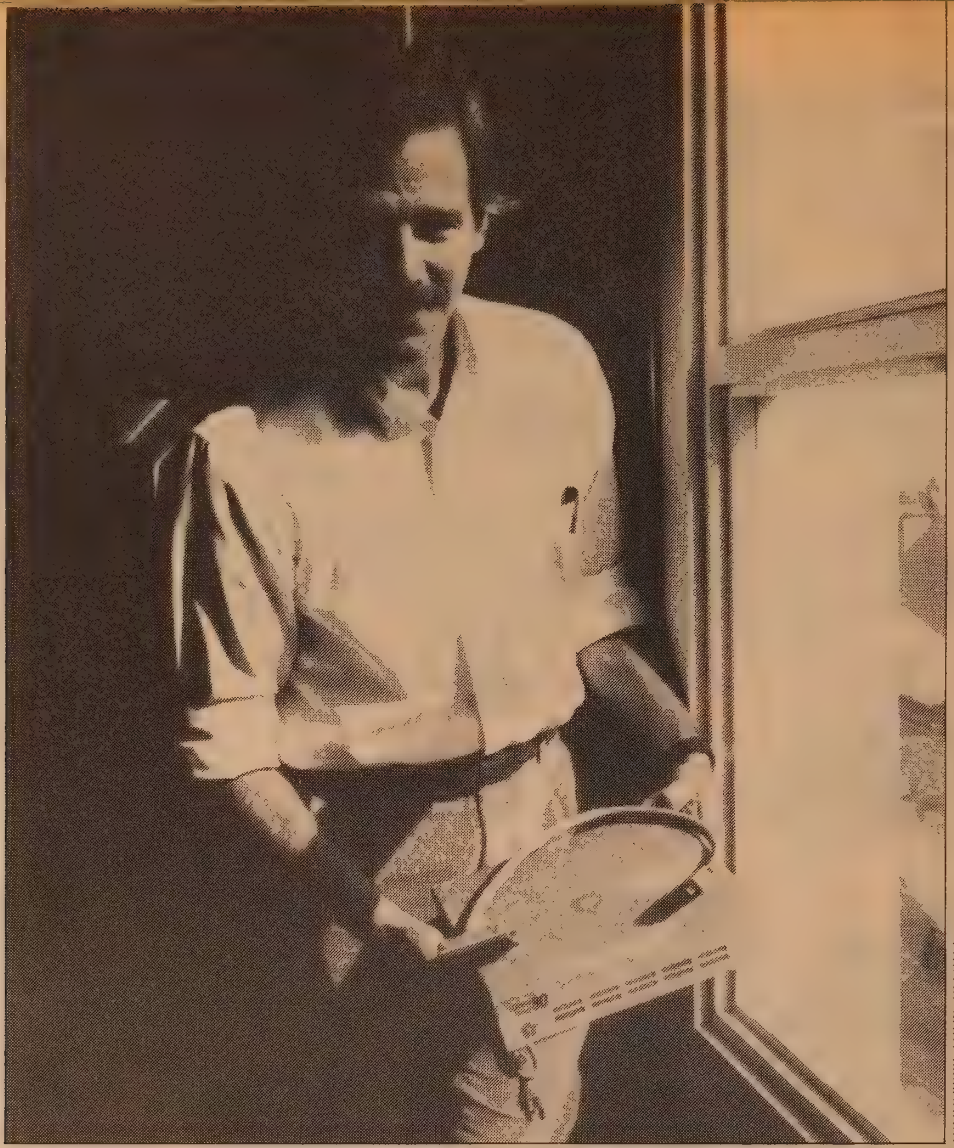


PHOTO: MARY EISENHART

Dennis Trager, Jasmine's marketing and product development vp, shows off the still-working Jasmine drive that survived a fire which destroyed the customer's office and melted the attached Macintosh.

Jasmine Computer Systems:

Mail Order Business Creates Market-Driven Mac Company

By Mary Eisenhart

In May of 1986, Dennis Chang decided to go into the PC clone business and founded Jasmine Computer Systems.

Unfortunately, he soon discovered that hundreds of vendors had the same idea, many of them with elaborate offshore facilities and virtually unlimited capital, and that it was nearly impossible for a small startup like Jasmine to be competitive.

As it happened, though, his associate introduced him to Alan Brunner, who had designed Micah's internal hard drive for the Macintosh. Brunner had also designed an external drive, and wanted Jasmine to market it. Chang liked the drive, looked at the burgeoning Macintosh marketplace (by the end of 1986 the Mac Plus was the single best-selling personal computer in the US), and realized that the market for quality Macintosh peripherals was relatively open.

Still, Jasmine was an obscure startup; as they prepared their 20 megabyte SCSI drive for release, its founders considered the most effective approach to marketing their drives and distinguishing them from the herd. "We looked at the *MacWorld* ads and who was involved, who the competion was," Chang recalls. "They had taken out very small, tiny ads — but we found out through the grapevine that these were producing three to five hundred orders a month. If we could do that, we could get off the ground.

"We noticed that the average price of a hard drive at the time was about $900 – $879 for 20 meg was cheap. Our experience in the PC world was, who would pay more than $600 for a hard drive?

"We wanted to come up with a product that was generic, in the sense that it was a commodity item, and that would really blow the top off the price. We had to be enticing to the public — we had this tiny ad, how could we entice them?

"I figured the timing was absolutely right for us, because nobody had dared have a price under $600. You have to really start a shakedown, and we decided we were the ones to do it with the $599 price." The Jasmine Direct Drive 20 began shipping in October of 1986 with a $599 price tag, and reached hundreds of sales per month almost immediately.

A key factor in Jasmine's ability to sell drives at low prices was the fact that its founders had decided on a direct-sales, mail-order based approach to marketing. Instead of a sales force, Jasmine spent its money on the biggest, best-looking ads it could afford. Says Dennis Trager, vice president of product marketing and development, "Going mail order was a very fortunate choice for us; it was probably the only choice for us at the time. We didn't have to pay a lot of outside sales people, we didn't have to pay a lot of different things — our salesmen were our ads, and we put the money into those salesmen."

But while this low overhead and high volume enabled Jasmine to grow at an impressive rate, another

EPSON
(w/Nation-Wide Protection Plan)

EQUITY I +
- 360K Floppy
- 20 Meg Hard Disk
- 640K Ram
- Serial/Parallel Port
- Monochrome Card
- Monochrome Monitor
- MS DOS
- GW Basic

$1295

EQUITY II TURBO
- 360K Floppy
- 20 Meg Hard Disk
- 640K Ram
- Serial/Parallel
- C/C
- Monochrome Monitor
- Graphic Card
- MS DOS
- GW Basic

$1395

EQUITY III +
- 80286 CPU 6-8 10 MHz
- 1.2 MEG Floppy
- 40 MEG Hard Disk
- DOS 3.2 Mono Monitor & Graphic Card

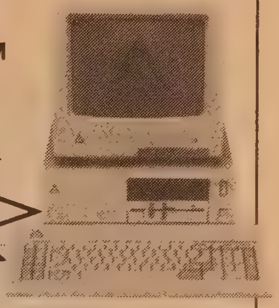
$2495

LOW PRICE LEADER

LEADING EDGE

MODEL "D"™

CALL FOR NEW LOW PRICES



ALL Configurations In Stock!

NEW IMS Bernoulli Dual Speed

MODEL "D" IS A REGISTERED TRADEMARK
OF LEADING EDGE PRODUCTS, INC.

Authorized Dealer Service Center

COMPAQ

Desk Pro 20 meg.	1495
286 30 meg.	2875
386 40 meg.	4595

CARD & MONITOR EXTRA

IBM

PS/2-30	$1695
PS/2-50	2595
PS/2-60-71	4595
PS/2-80-41	5100

LAP-TOP

Toshiba 3100-20	Call
NEC Multispeed	1395
NEC Multispeed EL	1695

HARD DISK

Seagate 20 meg.	305
Seagate 30 meg.	365
Seagate 4038	495
Seagate 251	465

SOFTWARE

Microsoft Word	249
Word Perfect 4.2	225
Word Star 2000	235
Leading Edge	65
Lotus 1-2-3	325
dBase III+	385
Windows	79
Gem Collection	175

NOVELL

Authorized Dealer
Netware By
Appointment Only

HP Laser II $1750

EPSON PRINTER BLOW OUT

Epson FX86E	$325
Epson 286E	455
Epson EX800	425
Epson EX1000	499
Epson LX800	210
Epson LQ800	395
Epson LQ1000	549
GQ3500	1295
LQ850	550
LQ1050	725

Drive A Little
Save A Lot

COMPUTER LANE

(818) 884-8644

22107 ROSCOE BLVD.
CANOGA PARK
1/2 BLOCK W. OF TOPANGA

HOURS:
M–S 10–6

Prices subject to change without notice.

Compaq is a Registered Trademark of Compaq
IBM is a Registered Trademark of International Business Machines

PHOTO: MARY EISENHART

General manager Ken Krich (l), vp Dennis Trager, and national sales manager Scott Gaidano with the compact Back Pac drive for the Mac Plus.

aspect of its mail-order, direct-sales approach produced a more long-term advantage — by having to be responsive to the infinitely varied (and vocally expressed) needs of individual customers, Jasmine grew as an exceptionally market-driven company. Says Chang: "Being mail order, we get direct complaints — and just as many compliments as we get complaints. This has allowed us to produce the kind of product that the customer wants. We listen to what they want and what they can afford."

When customers asked for features, Jasmine built them in. Jasmine external drives, for instance, include an external SCSI select switch, which Jasmine pioneered. The devices themselves have built-in surge protection, sockets in the rear for plugging in other devices, and a conveniently-located access panel. Each device also has an air filtration system to prevent the accumulation of dust in its innards. (The drives' durability also became the stuff of legend when one impressed client sent in his Direct Drive — a fire had completely destroyed the house and melted the Mac, while the smoke-scarred Jasmine drive works perfectly to this day.)

Customer feedback led Jasmine to suspect that, contrary to then-popular belief, there was a market for high-capacity storage devices in the Mac world — *if* the price was right. Working together with drive manufacturer Quantum to make one of its 80-megabyte drives work on the Macintosh, Jasmine introduced the Direct Drive 80 in January of this year. Recalls Trager: "We saw interest if we could do for the 80 what we did for the 20; in other words, people said that if you can make the 80 as attractive to us as you made the 20, then we're interested. At below $1400, people noticed us."

While the 20- and 80-megabyte drives continue to be Jasmine's best-sellers, customer feedback points out niches for specific and anything-but-me-tooish products. Consider, for example, the MegaDrive, which uses high-density MegaFloppy 10 megabyte storage cartridges. The cartridges can be easily removed for data security and offer effective low-cost storage or backup; using a MegaDrive for files and a hard disk for applications, for instance, offers fast access and economical storage. Another customer request that turned into a product: the BackPac, a thin, self-contained 40 meg SCSI drive that attaches to the Mac Plus' back. Trager explains: "The Back Pac addresses the fact that you've got probably 600,000 Mac Pluses out there, and they're looking at the fact that SEs can have internal hard drives. You can put a kludge internal hard drive in the Mac Plus, but it wasn't designed for it. Plus, if your drive goes down you lose your Mac. The Back Pac you put on the back of your Macintosh, and it's done." Adds Chang: "When Apple came out with the SE, it sent a hard message to Mac Plus owners — no upgrades. I think that was a harsh message, and so we took advantage of that." Jasmine's products also include internal drives for the Mac II and a full range of Direct Drives up to 160 megabytes.

There's general agreement at Jasmine that a key factor in its success is its exceptionally loyal customers. Says general manager Ken Krich: "As far as we can tell, about a third of the 80 [megabyte drive]s we sell are to people who already bought 20s." At the recent Macworld Expo in Boston, he says, "we would talk to a customer and tell them how great this drive was and so on, then get called away and come back, and that customer's telling the next customer." Adds Trager: "Old customers would come into the booth, and they'd listen while we talked to a new customer. And they'd jump right in and say, 'hey, I've got one of those drives, and it's such a great drive...'"

Dramatic growth is causing Jasmine to look for larger quarters, not for the first time in its short existence. On a strategic level, it's expanding its marketing plans. Krich explains, "We're trying to develop a three-corner plan: we want direct mail, we want a good dealer network, and we want to have national accounts. We want all three of those to be strong, but we're not going to sacrifice the one we started out with to build the other two." Chang says: "We don't destroy our foundation to build upon it."

Philosophically, Jasmine's committed to the Macintosh marketplace and its growth and prosperity. Says Chang: "There's a fundamental difference between the way Apple does business and the way IBM does business. We as a company adapt to doing business the way Apple is doing it. We feel very strongly that we've grown with the idea of keeping the spirit of the Macintosh, the spirit of the grass roots in the company as it grows larger." (Jasmine Computer Systems, 555 DeHaro Street, San Francisco, CA 94107) □

BUY DIRECT & SAVE

XT TURBO 640K $597 complete

286 SYSTEM $699

FEATURES:
- IBM PC/XT Compatible
- 4/8 MHz CPU Speeds
- 640K RAM Memory
- Two 360K Diskette Drives
- 150 Watt Switching Power Supply
- FCC Approved Chassis
- AT Style Keyboard
- Hi-Res Amber Monitor
- Herc. Comp. Graphics Card
- Parallel Port
- Complete & Ready to Run!
- **1 Year Parts & Labor Warranty**

FEATURES:
- IBM AT Compatible
- 6/10 MHz CPU Speeds
- 640K RAM Memory
- Zero Wait State Available
- One 360K Diskette Drive
- Floppy Disk Controller Card
- 200W Switching Power Supply
- FCC Approved Chassis
- Enhanced Keyboard
- On board clock/calendar
- **1 Year Parts & Labor Warranty**

14 Day Money Back Guarantee

See Us At COMDEX/Fall '87
November 2-6, 1987 Riviera Hotel Las Vegas, Nevada Booth No. R8129

Seagate
Hard Disks

ST-225 20 MB w/ controller	$269
ST-238 30 MB w/ controller	$289
ST-251 40 MB, 38 ns	$389
ST-4095 80 MB, 28 ns	$830
Tandon 85 MB, 28 ns	$790

ATI-WONDER EGA CARD
- 800 X 560 Resolution
- IBM EGA, CGA & VGA Herc. Graphics Compatible
- Auto Switch

$195

LOGITECH C7 MOUSE
$69

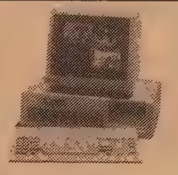
PC OPTICAL MOUSE
$99

CITIZEN
PRINTERS

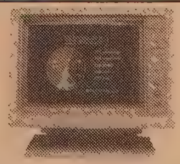
120D	$165
MSP 10	$250
MSP 15	$315
MSP 20	$285
MSP 25	$380
MSP 55	$440
Tribute 224	$604
Premiere 35	$440

MiniScribe
Hard Disks

3438 30 MB w/ controller	$299
3650 40 MB w/ controller	$415
6053 40 MB, 28 ns	$599
6085 70 MB, 28 ns	$799



CTX 1422 EGA Monitor and EGA Card
Sale $405



MAGNAVOX MONITORS

MAGNAVOX Multi Scan (8CM873) 926 X 580	$530
MAGNAVOX EGA (8CM540) 720 X 250	$380
MAGNAVOX CGA (8562)	$245

MODEMS

1200B Internal	$75
1200B External	99
2400B Internal	170
2400B External	199

Smart-One, Everex, Mitsuba, U.S. Robotics, and others.

All merchandise is subject to prior sale. M.O. & Cashier's check Accepted.
Add Shipping & Handling
CA Res add 6.5% sales tax

A·TRONIC
COMPUTER AND OFFICE MACHINES

15703 E. Valley Blvd., City of Industry, CA 91744
TEL: (818) 333-0193 - FAX: (818) 961-4337
OPENING SOON! BRANCH: 7150 Beverly Blvd., Los Angeles, CA 90036
TEL: (213) 930-2823

VISA/MASTERCARD WELCOME

SEASONS SAVINGS FROM

CURRENT SPECIALS

CANON Laser Jet (supply limited)	$1595.00
PARADISE 350 EGA Autoswitch	$ 195.00
PARADISE 480 EGA Autoswitch	$ 229.00
MITSUBISHI Diamond Scan Monitor	$ 499.00
MYLEX 132 Col. Mono Graphics Card	$ 79.00
Diskette Holder (Holds 100)	$ 7.95
Diskettes 10 DS/DD 5 1/4″	$ 3.95
MICROSOFT DOS 3.21 w/GW Basic	$ 69.95

We've gotta

Sleighful of Software

Covering a Whole Wall in Our Showroom. OVER 200 to Choose from, including:

#8017 AS EASY AS

- 1, 2, 3 Workalike Spreadsheet
- 256 Columns x 1024 Rows
- Full Math Functions with Graphs
- Uses Lotus File Structure
- Great Documentation

#8350U HERCULES

Allows Hercules Monochrome Graphic Systems to run color games and other color graphics applications. Documentation included.

COUPON

FREE SOFTWARE PACKAGE

Good for 1 Featured Software Package Described Above.

Limit 1 coupon per household.

XT TURBO SYSTEMS

1220 — $ 649.00
- 10 MHz
- 2 - 360K Drives

1420 — $ 975.00
- 10 MHz
- 1 - 360K Drives
- 20 MB SEAGATE Hard Drive
- Software Menu
- 3 Hour Training Class

1520 — $ 995.00
- 10 MHz
- 1 - 360K Drives
- 30 MB FUJI Hard Drive
- Software Menu
- 3 Hour Training Class

ALL SYSTEMS INCLUDE:

640K RAM (120 ns); 84 key keyboard; Hercules Compatible Mono Graphics; Hi Resolution Amber Monitor w/Swivel Base; Clock/Calendar w/rechargeable battery; Parallel, Serial, Game Ports; PHOENIX BIOS; 150 Watt Power Supply; 1 Week Blitz Test; Deluxe AT Style Cabinet.

AT TURBO SYSTEMS

2400 — $1295.00
- 10 MHz
- 20 MB FUJI Hard Drive
- 65 MS Access Time

2500 — $1395.00
- 10 MHz
- 30 MB FUJI Hard Drive
- 65 MS Access Time

2700 — $1495.00
- 10 MHz
- 40 MB SEAGATE (ST251) Hard Drive
- 39 MS Access Time

2800 — $1695.00
- 10 MHz
- 60 MB SEAGATE (ST277R)
- 39 MS Access Time

2900 — $1995.00
- 10 MHz
- 70 MB MINISCRIBE (6085)
- 28 MS Access Time

ALL SYSTEMS INCLUDE:

512K RAM (100 ns); 1.2 MB Drive; 84 Key Keyboard; Hercules Compatible Mono Graphics; Hi Resolution Amber Monitor w/Swivel Base; Clock/Calendar w/rechargeable battery; Parallel, Serial, Game Ports; PHOENIX BIOS; 200 Watt Power Supply; 1 Week Blitz Test; Floppy/Hard Drive Controller; 3 Hour Training Class; Deluxe Full Size AT Cabinet.

CALL TODAY!
(714) 771-7361

MONITORS

PACKARD BELL Swivel Monochrome	$ 85.00
SAMSUNG Flat Screen Swivel	$ 89.00
MITSUBA 14″ Monochrome	$150.00
SAMSUNG CGA	$269.00
PANASONIC EGA	$459.00
SAMSUNG EGA	$399.95
NEC MULTISYNC	$549.95
MITSUBISHI Diamond Scan	$519.95
WYSE 700 w/card	$699.95

PRINTERS

PANASONIC - 1080i II, 1091i II, 1092i, 1592, 1595, 1524, KXP3131 Daisy Wheel

NEC - P2200 Pinwriter, P6, P7, CP6, CP7

CANON - Laser Jet

CITIZEN - MSP-10, MSP-15, MSP-20, MSP-25, MSP-35 Daisy Wheel

ACCESSORIES

- Books
- DOS 3.1, 3.20, 3.21
- Cables - Full Selection
- Extenders, Gender Changers
- Diskettes & Holders
  3 1/2″ & 5 1/4″
  360K, 1.2 MB
- Modems - 300, 1200, 2400 Baud
- Mouse - Mechanical, optical
- Joysticks
- Computer Covers
- USER SUPPORTED SOFTWARE
  200+ Disks in stock
- Keyboard Drawers - metal, wood
- Printer Stands
- Paper - Largest Selection
- Electronic Parts & IC's
- Utility Software - Norton, Mace

#1 QUALITY LEADER

REASON #7:
QUALITY CONTROL

Our **PROPRIETARY** one week BLITZ TEST cycles power on and off every 6 hours around the clock. It thoroughly analyzes every system (up to 42 at one time) every two hours and records the test results for every system.

After one week of being cycled, burned-in and tested, the test results for each system are stored in a permanent data base which also records exact system configuration.

This stratistical information is used to help us continually improve the quality of our product. As our data base grows, we just keep getting better and better.

Please come in any time during business hours and ask for a tour of our production facilities. We will be happy to show you around.

WE CARRY:

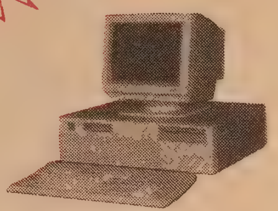
LOGI-TECH, PHOENIX, MITSUBISHI, INTEL, PANASONIC, OKIDATA, PARADISE, CANON, MITSUBA, HEWLETT-PACKARD, WESTERN DIGITAL, EVEREX, MYLEX, TEAC, MAXELL, DYSAN, FUJI, SEAGATE, NEC, SONY, NORTON, PACKARD BELL, SAMSUNG, CTX, CITIZEN, CURTIS.

NEW

CSR SYSTEM 2400
10 MHz AT SYSTEM

Complete System: Top of the Line AT

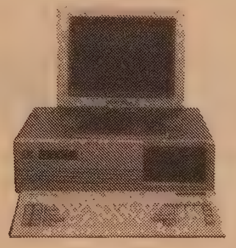
- Western Digital Floppy/Hard Disk Controller
- 512K RAM (100 ns)
- 6/10 MHz Switchable Zero Wait State
- Norton S. I. Rating 11.2
- PHOENIX BIOS
- One 1.2 TEAC Floppy Drive
- Hercules Compatible Graphics
- Hi-Res Amber Swivel Monitor
- 1 Parallel Printer Port
- Clock/Calendar w/rechargeable battery
- AT Keyboard (84 Key)
- 200 Watt Power Supply
- Deluxe AT Cabinet w/LEDs Installed
- 3 Hours (Hands On) Training
- 1 Week Blitz™ Burn-in & Test
- Turnkey Software (4 MB) Installed



- **WITH 20 MB FUJI Hard Drive**

$1295.00

NEW



- **WITH 30 MB FUJI Hard Drive**

$995.00

CSR SYSTEM 1520
10 MHz XT SYSTEM

Complete System: Top of the Line XT

- 4.77/10 MHz Switchable
- 1 - 360K TEAC Floppy Drive
- High Resolution Amber Swivel Monitor
- AT Style Keyboard
- Hercules Compatible Graphics
- 640K RAM (120 ns)
- 2 Parallel, 1 Serial, 1 Game Port
- Clock/Calendar w/rechargeable battery
- Norton S. I. Rating 4.0
- PHOENIX BIOS
- 1 Week Blitz™ Burn-in & Test
- Deluxe Baby AT Cabinet w/LEDs
- 3 Hours (Hands On) Training
- 4 MB of Software/Turnkey Installed

CSR Computer Resources Co.

Quality, Technology and Value since 1980

YOUR ONE STOP COMPUTER SHOP

920 N. MAIN ST. & COLLINS
ORANGE, CA 92668

714-771-7361

HOURS:
9 – 6 TUES. – FRI. • 10 – 5 SAT.

Above prices are cash and carry only. MC and VISA ARE accepted — please add 3%. CA residents add 6% sales tax. COD adds addl. cost to cover UPS charges. DEALER INQUIRIES INVITED. PRICES AND AVAILABILITY SUBJECT TO CHANGE WITHOUT NOTICE

DEALERS & CONSULTANTS ONLY

Please Call For Complete Confidential Price List

IBM

PS II Model 30-002/021	$1230/1595
PS II Model 50-021	2495
PS II Model 60-44MB/70MB	3650/4195
PS II Model 80-44MB/70MB	5085/6095
AT 339 (8MHz, 512K, 30 MB)	3495
AT 068 (6MHz, 256K)	2395
XT 286 (6MHz, 640K, 20MB)	1895
Mono Display 8503	189
Color Display 8512	439
Color Display 8513 (EGA)	510
5¼ External Drive	295
IBM Mouse for system II	85
IBM Modem for system II	310
IBM DOS 3.3 (min 5)	85
Pro Printer II/XL	375/545
Pro Printer X24/XL24	555/695
Quiet Writer II/III	975/1195
IBM DOS 3.3	85

CALL FOR ALL OTHER COMPUTER PRODUCTS

*QUANTITY DISCOUNT AVAILABLE

Seagate

SEAGATE HARD DRIVES

20MB/30MB W/Controller	$269/299
30MB/40MB Full Height	475/565
40MB (ST251)/65MB (277N)	365/565
80MB (4096)/80MB (277R)	875/599

MINISCRIBE

20MB/30MB RLL W/Cont.	$265/295
40MB (3650)/40MB (3053)	325/525
40MB (6053) Full Height	585
80MB Full Height	799

HARD CARDS

20MB/30MB for XT	$365/399
30MB for AT	455
40MB for XT	499

MISCELLANEOUS

130MB Maxtor 28MIsecond	$1950
40MB Compaq for 386/286	695
20MB Tandon 3½ inch	225
10MB IBM Full Height	195

COMPAQ®

DESKPRO MODELS

386 40 MB (Factory Upgrade)	$4395/4195
386 70 MB (Factory Upgrade)	4995/4695
386 130MB Factory Only	5995
286 Model 1/With 20MB	1850/2295
286 Model 40 (Factory)	2950
Deskpro 2Drive 256K/20MB	1050/1395

PORTABLES

II Model 4 (Factory)	$2595
II Model 4 (Upgrade)	2395
II Model 2 2dr., 256K	1895
Portable 2 Drive 256K	1550
286 Model 2 (640K, 20MB)	2495
* *III Model 20MB	3495
* *III Model 40MB* *	3995
Compaq Amber/Green	195
Compaq EGA Monitor	545
Compaq EGA Adapter	410
386 Memory Exp. Board	Call
1MB Memory Exp. Kit	295
Compaq DOS 3.1/3.2	59/71

Quantity Discount Available

Quantity Discount Available

Dealers & Consultants Only

Corporate & Retail Customers Call For Quotes

intel

8087-3 XT/80287-6 AT	$95/160
8087-2 XT/80287-8 AT	145/249
80287-10 XT 10 MHz	289
80387-16 for 80386 base machine	

OKIDATA

ML182/182 Serial	$199/269
ML192+/193+	CALL
ML292E/293E	369/499
ML393/393 Color	945/1029
ML294/2410	737/1695
Lazer Line 6	1299

EPSON

LX800/FX86E	$205/325
FX286/FX286E	410/469
EX800/EX1000	425/505
LQ800/LQ1000	425/535
LQ2500/Epson Laser	899/1395

TOSHIBA

321SL (216CPS)	$479
341SL (216CPS)	645
351-2/351-2 Color	865/1019
Toshiba T1000/1100	825/Call
Toshiba T3120 MB	2995
Modem for Laptops	299

HEWLETT PACKARD

Laser Series II	$1695
Laser Jet 500+	3295
1MB Mem. Expansion	369
2MB Mem. Expansion	699
HP Plotters & Scanners	IN STOCK
Font Cartridges & Legal Trays	CALL

Floppy Drives Priced for 10

Fujitsu 360K/1.2MB	$67/89
Teac 360K/1.2MB	85/95
Toshiba 360K1.2MB	73/95
Toshiba 3.5″ Internal	97

LOTUS 1-2-3 $289 ***LOTUS SYMPHONY $429***

D-DATA

One stop shopping for dealers & consultants. We also carry NEC • AST • HERCULES • DRAMS • MODEMS • CITIZEN • MICROPOLIS • SONY • MICROSOFT

SALES/SERVICE/REPAIR

4742 Woodman Avenue
Sherman Oaks, CA 91423

Visa VISA
MasterCard master charge

For phone order call:
(818) 905-0994 (213) 859-3410

The PC Port Controller

CSI's David Azoff On The "Poor Man's LAN" And The Joys Of Forth

By Robert Beauchamp

PORT 0
PORT 1
PORT 2
PORT 3
PORT 4
PORT 5
PORT 6
PORT 7
PORT 8
PORT 9

David Azoff, president of Component Systems Inc., developed the PC Port Controller to serve one purpose: to make CSI's credit card reader more versatile. As its potential was discovered, however, the device met the needs of an ever-growing and ever more enthusiastic group of users, mostly for applications having nothing to do with credit cards.

From the outside, the Port Controller is a metal box with ten RS-232C or serial ports on one side. Its simple exterior belies the fact that it's a powerful switching and buffering device for all electronic equipment that uses an RS-232C interface—printers, buffers, modems, data input devices, light pens, plotters, other PCs, and practically anything else with a serial plug on it.

Applications are written in the Forth programming language, which is resident in the controller. The applications take data that comes into the device from one or more ports, manipulate it in the fashion the user desires and then send the data out again to any of the ports the user wishes.

The port controller has been put to a variety of tasks. It serves as a low cost LAN in law offices as well as a monitor for boilers in Chicago. It has proved so versatile that CSI has received inquiries from as far away as Australia.

How did CSI come to design the Port Controller?
We were building some other devices and manufacturing a credit card reader. We lost quite a few contracts and orders due to the fact that we did not have a device that could support more than one RS-232 device. So we had to initially start from scratch and develop a box that you could connect twelve RS-232 devices to. One thing led to another, and that's how this port controller came about.

The essence of a port controller is to expand the RS-232 capability of a PC, or any computer, that has an RS-232 device. We can hang printers on it. We can hang terminals on it, and we can actually hang PCs on it. You can have a number of PCs interconnected and able to communicate with one another.

We can mix and match Macintoshes and PCs. It's ideal for that. You might have three or four Macs and three or four PCs, and they can talk to one another. It's ideal for that situation.

You can transfer files, you can hang modems on it. It's basically what I would call a poor man's LAN. It doesn't have all of the features of a LAN, but it has enough to accommodate a lot of things that are out there in a very cost effective way.

Is the PC Port Controller likeliest to be used in a corporate environment, a small business or by individuals?
It can be used across the board. It's what I call a lunchbox—everybody has to have lunch. It's one of these devices that fits anyone's situation. It's like a tool, really, that anyone can utilize from the corporation down. I question whether a single individual should have one unless he has a need for all these ports.

Typically attorneys with multiple PCs would use it. The State of California, Levi Strauss, the *L.A. Times*—Lucky Stores uses it for quality control, people with hard disk media are using it. It has numerous applications for data collection—typically point-of-sale where you have cash registers, bar code readers and credit card readers all online. You can integrate all that into a workstation.

It also gives you a pre-processing capability before information gets to the computer, thereby taking all the overhead off the computer.

For example, you can have information coming in on a line. Once it gets in the port controller you flag it. As you go in you pre-process the information; the computer looks up the information that you ask for, pulls out the information, and then as it leaves the controller it drops the flag. You can do all this with the computer, but it's a waste of computer time.

What sort of applications is the controller being used for?
There is a company in Chicago that will be using it with boilers. They have six boilers on line. They want to collect data, date stamp it, and time stamp it in packets every ten minutes. They don't want to download the information every time it comes down from the boilers. They want to get the information, store it and de-queue it at the right time. It's an ideal application for our port controller.

Levi Strauss is using it on a conveyerized system to process their packaging. They log their data, such as addressing and weight, and then integrate it into a host computer. This way they know what time a package was weighed and where it's going to. This is the kind of information they need in an automated warehouse. Basically it's part of a big tracking system.

The *LA Times* is using it for getting data from worldwide wire services. They use our port controller to packet the data coming from all the wire services—they wrote routines to look at the headlines. A lot of the data comes in incomplete spurts. They did not want to use the computer time to retrieve the information, wait for the information and then track that information. They packet all the information once it gets together, and then de-queue it once the whole packet is full. They can actually disperse the information, according to the headline, to the right computer once the whole packet is in.

Once you write your applications, where do they reside?
They reside in the contoller itself. What you have is what we call an E-squared. Once you toggle your application in, it's no longer volatile. We have 192K of RAM on board. It offers some spooling and buffering.

The applications for the PC Port Controller have to be written in the Forth language. Have you met any resistance to this?
People are dubious when it comes to using Forth. Forth is a very strange animal in itself, and people think we're in left field when we say we have Forth implemented in the box as a resident software program. They look at you and say, "Where the hell are you coming from? Forth? Why didn't you use Pascal, or why didn't you use Fortran, or why haven't you used C?" These are very typical questions we get. Unfortunately a lot of customers aren't oriented in the computer field. Even the people in the computer field that I would consider well versed come out and say they don't understand the problem. As smart as they are, they don't understand the scope of what we have here.

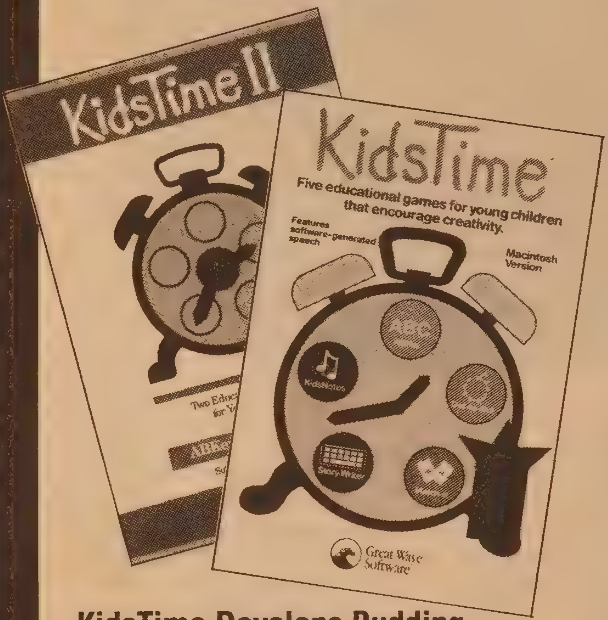
What are they missing?
It's not what they're missing as much as it's what they don't know. People aren't aware of the fact that Forth is a very powerful language and it's self-contained. You don't have to have a disk operating system to implement a program. You don't need that with this box. It's a standalone device.

Forth resides in the Port Controller. It's actually a compiled language. Since you don't have to compile it, you can implement your applications as soon as you write them. You don't waste any time. Normally it might take you four hours to write a little routine and then test it and compile it. Here you can do it in ten minutes. It's self contained. You don't have to re-invent anything. You write it and you implement it.

It sells for $877, $87 a node. Which is very cost effective, really. We are pointing our marketing direction into very unusual situations, into areas such as automation and more specific areas where we find people are interested in utilizing it. (Component Systems Inc., 778-A Brannan Street, San Francisco, CA 94103. 415/861-1345.) ☐

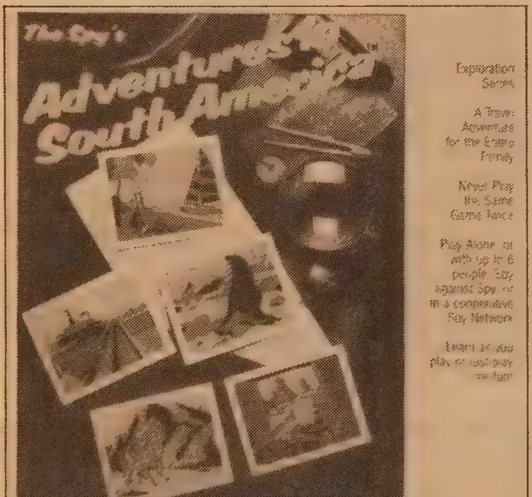
HOLIDAY GIFT BUYERS GUIDE

FOR THE KIDS


KidsTime II
KidsTime
Five educational games for young children that encourage creativity.
Features software-generated speech
Macintosh Version
Great Wave Software

KidsTime Develops Budding Talents

Two packages from Great Wave Software include games that develop creative skills in children three to eight years old. *KidsTime* for the Macintosh includes five games, KidsNotes, StoryWriter, ABKey, Dot-To-Dot and Match-It. Children learn everything from concentration and musical notation to letter recognition and typing skills. *KidsTime II* for the Apple IIGS includes ABKey and KidsNotes. Great Wave Software, P.O. Box 5847, Stanford, CA 94305. (408) 438-1990. $49.95 for *Kids Time* and $39.95 for *Kids Time II*.

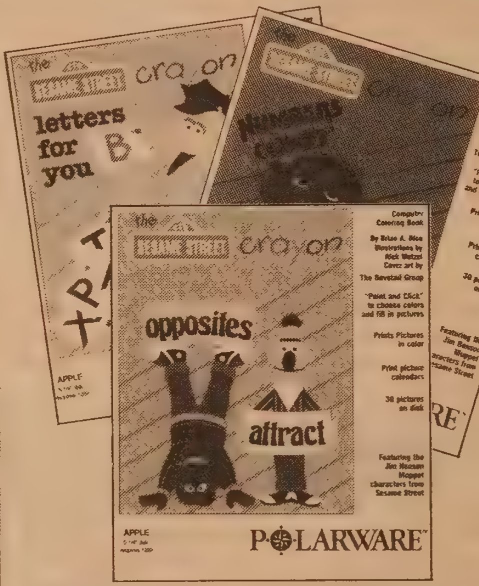

The Spy's Adventures in South America
Exploration Series
Apple
POLARWARE

The Spy Goes To South America

In Polarware's *The Spy's Adventures In South America,* the fiendish Dr. X is up to his old tricks, and this time he is hiding in South America. You can play alone and and seek informants to help you locate Dr. X or you can play with 2-6 players and form a spy network—that is, unless you play against each other, and then it becomes a race against time and the other spy's skill. This family oriented game combines skill and learning as you travel from Central America to the Arctic circle on your mission. Available for the IBM ($19.95) and the Apple II series and Commodore computers ($17.95). Polarware, 512 Hamilton St., P.O. Box 311 Geneva, IL 60134. (800) 323-0884.

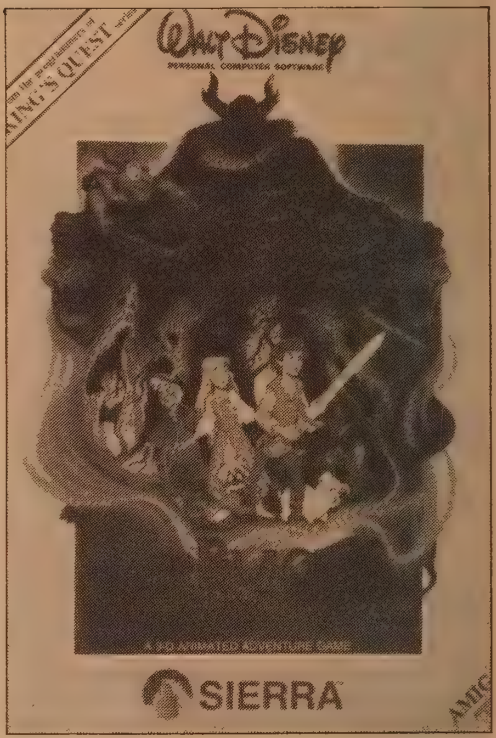
Sesame Street Coloring Books On Your Computer

Polarware and The Children's Television Workshop have brought your favorite Sesame Street characters to the computer screen. The Sesame Street Crayon Series consists of three programs containing dozens of pictures that can be colored over and over. Using the package like a junior version of paint programs, preschoolers use a mouse to fill in shapes with colors they choose from a palette. On Apple versions the pictures can be printed in color. The series includes *Letters For You* with Big Bird, *Numbers Count* with The Count and *Opposites Attract* with Bert and Ernie. The series is designed to be fun and educational at the same time. $14.95 each. Versions available for the Apple II and IBM. Polarware, 512 Hamilton St., P.O. Box 311 Geneva, IL 60134. (800) 323-0884.


the Sesame Street crayon
letters for you
Numbers Count
opposites attract
POLARWARE

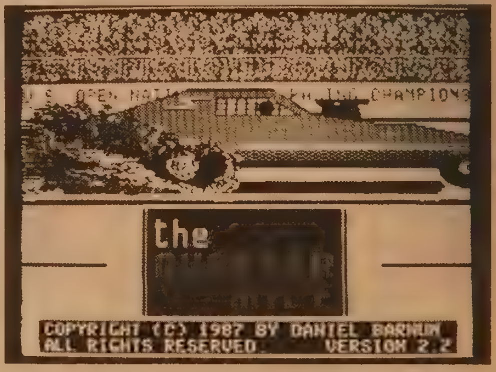
Re-Live Disney's The Black Cauldron

Based on the Disney movie of the same name, Sierra's *The Black Cauldron* is a 3-D animated adventure that combines over 1,000 cells of animation and six built in arcade sequences and mazes. No text commands are needed, as all the action is controlled by a joystick or control keys. *The Black Cauldron* includes over eight different musical tunes, all from the original score of the movie. There are multiple solutions and variable scoring which allows you to follow the plot of the film or devise your own way to overcome the evil Horned King. For the Amiga. Versions for other computers also available. Distributed by Electronic Arts, 1820 Gateway Drive, San Mateo, CA 94404. (415) 571-7171.


King's Quest
Walt Disney
Personal Computer Software
A 3-D Animated Adventure Game
SIERRA

Turn Learning Math From A Drag Into A Drag Strip With The Quarter Mile

The Quarter Mile from Barnum Software is an arcade-style math game that pits players' against themselves or other players. Players' skills improve as they race against their own best scores on a six lane drag strip. *Quarter Mile* features fast animation, adjustable sound, and the ability to save hundreds of entire races. Players can also print their rankings. Emphasis is on basic arithmetic while accessory disks cover decimals, fractions, percents, integers and more. For the Apple II. ($45., $10. for accessory disks.) Barnum Software, 2201 Broadway, Suite 201M, Oakland, CA 94612. (415) 268-0804.


CHAMPIONS
the

```
COPYRIGHT (C) 1987 BY DANIEL BARNUM
ALL RIGHTS RESERVED      VERSION 2.2
```

Helping Developers From Startup To Success

The Software Entrepreneurs' Forum

By Helmi Kobler

Ed Niehaus (center) offers advice at a meeting of SEF's Marketing SIG.

> ***It takes more than programming talent to make a successful company. Instead, a myriad of other factors are involved — good documentation, packaging, production, distribution, advertising, financing and legal advice.***

Today's software industry has come a long way from the garages and living rooms that bore it years ago. Once modest startups, companies such as Microsoft, Lotus and Ashton-Tate have developed into multi-million dollar corporations with great resources in management, marketing and production. But in a world dominated by these and other software mammoths, one wonders if the romantic notion of an innovative, enterprising individual starting his own company and succeeding is plausible any longer. A group of software entrepreneurs believes that it is, and have organized into the Software Entrepreneurs' Forum (SEF) to help each other compete and succeed in the industry.

SEF's philosophy is that it takes more than programming talent to make a successful company. Instead, a myriad of other factors are involved — good documentation, packaging, production, distribution, advertising, financing and legal advice. This was the realization of several software entrepreneurs who met in July, 1983 during a Bay Area seminar entitled "Marketing in the '80s" held by the Professional and Technical Consultants Association. The seminar dealt with developing and marketing software, and inspired a number of participants to found a group dedicated to investigating those and similar issues.

By October, 1983, the 14 founding members had formally established SEF and laid out the group's credo: to provide the software entrepreneur with the resources needed to successfully compete with larger, established companies.

Since then, the group's membership has grown from 14 to over 300. Based in Palo Alto, SEF holds several general and Special Interest Group meetings each month, and sponsors one-time seminars and workshops to address the issues a software entrepreneur is most likely to be concerned with. The group's general meetings, held on the third Thursday of each month in Palo Alto, have traditionally featured "big name" guest speakers or panels expounding on everything from industry trends and software development techniques to marketing strategies and legal issues.

SEF's speaker history reads like a roll call of industry celebrities, including journalist John Dvorak, Philippe Kahn of Borland International, Bill Joy of Sun Microsystems, Andy Hertzfeld of Radius, David Winer of Living Videotext, George Morrow of Morrow Designs, Trip Hawkins of Electronic Arts and Rob Campbell of Forethought.

Recent SEF meetings have seen Stewart Alsop, editor of the *P.C. Letter* and then West Coast editor of *PC Magazine*, speak on the "look and feel" copyright issue and how it would affect developers. Jean-Louis Gassee, Apple Computer's VP of Product Development, spoke on the company's Mac SE and II machines, and the new software he hoped they would encourage. A panel consisting of Paul Saffo of *Personal Computing*, David Needle of *Computer Currents*, and Tony Bove and Cheryl Rhodes of *Desktop Publishing: The Bove And Rhodes Report* discussed how small developers can get their products editorial coverage and how strong a link exists between editorial coverage and advertising.

PHOTO: ED NIEHAUS

Rob Campbell, president of Forethought, addressed a recent meeting of SEF.

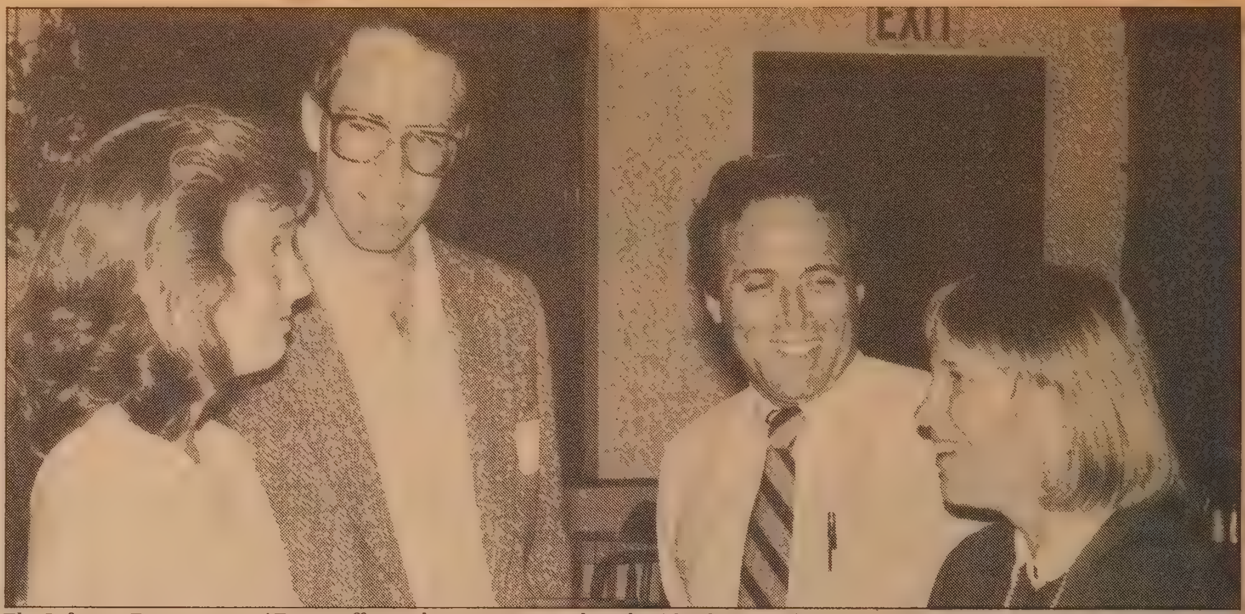
In addition to its general meetings, SEF currently sponsors Macintosh, IBM and Marketing Special Interest Groups with specific focuses. The Mac and IBM SIGs, for instance, have strong technical thrusts and provide an environment where developers can keep in touch with others in their field, and share various programming tricks and techniques to help each other avoid reinventing the proverbial wheel when designing products. The SIGs also concern themselves with less technical but machine-specific issues as well. For instance, a recent Mac SIG meeting featured Bill Campbell, president of Apple's spin-off software company Claris, speaking on Claris's new role in the Mac software community and the effects it might have on other developers.

SEF's Marketing SIG addresses members' interest in the various steps involved in selling software after code has been written. Says the SIG's chairman, Don Morrison, "It's a place to learn how to make those critical decisions that mean success or failure of a product in terms of its acceptance in the marketplace." In that pursuit, the Marketing SIG has investigated topics such as public relations strategies, alternative distribution channels, and site licensing of software. A recent meeting featured Brice Schuller, partner in the San Francisco advertising firm Vaughn & Schuller. Schuller, who's done advertising for the likes of Microsoft, Atari, Cordata, Mouse Systems and others, spoke on designing and placing small ads that sell, advising his audience on how to pick the publications whose readership is in the appropriate market, how to save money on artwork and photos, and how to write effective ad copy.

For thoroughly exploring specific entrepreneur issues, SEF sponsors a number of one-day seminars and workshops. One seminar dealt with the many legal issues facing software developers and publishers, such as copyright laws, contracts, warranties and disclaimers. Another recent seminar focused on software publishing, and featured a panel made up of publishers such as Gary Carlston, chairman of Brøderbund, James Levy, former president of Activision, and Heidi Roizen, president of T-Maker. The distinguished panel discussed the benefits and drawbacks an individual faces when marketing software through a publishing firm, what many publishers are looking for in a product, and how to go about negotiating the financial and licensing terms of a publishing relationship.

Guy Kawasaki of Acius was a recent featured speaker.

PHOTO: JACK STILES



The Software Entrepreneurs' Forum offers a chance to meet and work with others involved in software development. SEF president Nancy Crewdson (r) joins a discussion at a recent meeting.

Whether it's an SEF seminar, SIG or general meeting, though, all provide an atmosphere where members have an opportunity to meet industry leaders, share experiences, make contacts and perhaps establish business relationships. Informal conversations ranging from industry news to business advice abound at meetings, as well as the steady exchange of business cards. Visitors and new members are regularly asked to introduce themselves at general meetings, stating their profession and entrepreneurial aspirations, while job announcements are frequently made to the membership. SEF's monthly newsletter keeps members abreast of meeting and seminar highlights, and reports on new product releases and other significant news announced by members.

Michael Lunsford, founder and president of MacroPac International, is one entrepreneur who can testify to SEF's utility. Lunsford, who developed *101 Macros For Lotus 1-2-3* (and subsequent versions for *Symphony, Excel* and *SuperCalc)* is a textbook example of a software entrepreneur. Holding a bachelor's degree in English Literature, he was introduced to *Lotus 1-2-3* while working in an office. Recognizing a demand for generic Lotus macros that could be customized for specific tasks, he set out to develop *101 Macros*. He introduced the product, without packaging or a manual, at a local computer swap meet, and soon after placed an ad for it in *Lotus* magazine. *101 Macros* was well-received, but selling it eventually became a full-time job, resulting in Lunsford founding MacroPac in January of 1986. It was shortly after that when Lunsford joined SEF.

Lunsford found SEF a great resource in helping him deal with the responsibilities and decisions involved with running a startup software company. "SEF had a dramatic contribution to my overall success," he says. "It's a wonderful resource for making contacts, it's a wonderful place to get current information right from the horse's mouth, and it's a good way to get known by the developers' community."

An SEF seminar on direct mail marketing was especially helpful, says Lunsford, who, until recently, sold his software through mail order channels only. "It helped me in learning more about how to develop my ads, and how to develop my mail pieces. In fact, most of what I know about ads and mail pieces I learned from that seminar."

Bill Ray, founder and president of Apian Software, is another entrepreneur who has found SEF useful. Ray joined SEF early in 1986, before forming Apian and developing its *Decision Pad* software, a decision-making application aimed at office management types. Having been a member of SEF throughout the process of starting a company, developing a product and finally releasing it, Ray says of SEF, "It's invaluable. For me, it's been a place to listen and learn. When you're a small company you can't afford to make mistakes; you have to learn from others. And you can't learn everything from books."

Ray attributes to SEF his discovery of the importance of public relations to a startup. "My naive view was introduce a product and put out ads. But you have to start with PR — getting reviews written, press releases sent out — to build up your company's credibility and let people know about your product."

Had it not been for SEF, Ray says, Apian Software would probably have taken on a different form, either finding a publishing firm to market *Decision Pad* or recruiting a partner with marketing expertise. "With SEF around, though, I have a source of information to make progress without a publisher or other partner."

SEF can also benefit the established company or developer as well as the aspiring entrepreneur. The group's members are highly knowledgeable and experienced in their fields, and companies have found it useful to call upon the memberships' resources. When Sybex, a large publisher of computer books, was looking for someone to write a book on *Lotus 1-2-3*, it called SEF for referrals. As a result, two SEF members have signed a contract with Sybex to write the book.

David Winer, president of Living Videotext (which created and markets *MORE* and *Ready)* is looking for ideas from SEF. "I thought it was a good way to get some ideas, perhaps from other people," he says, recalling his early interest in the group. "My hope for the Software Entrepreneurs' Forum is that it can turn into a breeding ground for marketable ideas. That's where we [software publishers] come in because that's our business — to take ideas and dress them up and promote them and turn them into profitable businesses. I didn't join SEF until my company was well on its way...Now I'm sitting on the other side of the fence, and what I'm interested in is finding ideas that are commercially viable and products that can be sold. That's what I'm really looking to get from SEF."

SEF has become a resource of valuable information, instruction, and contacts to hundreds of developers, entrepreneurs and software publishers. Though it's geared to improving a small company's odds for success, SEF can serve just about any member of the software industry. SEF's annual membership dues are $75, and include a subscription to the group's monthly newsletter ($20 for the subscription alone, $35 with overseas postage). The group's general meetings are held on the third Thursday of each month at Harry's Hofbrau at the Palo Alto Municipal Golf Course Club House, 1875 Embarcadero Road, Palo Alto (exit 101 at Embarcadero, go East to Golf Course Airport Complex). Each meeting starts at 6:30 pm with a no-host bar, followed by dinner at 7 pm and the speaker's presentation at 8 pm. Call Barbara Cass, SEF's Executive Director, at (415) 854-7219, or send electronic mail to "SEF" on MCI Mail, for more information. ☐

Call For Complete Catalog

Dealers

We Want Your Business

Limited Offer Call Now

SONY • TOSHIBA • MINISCRIBE • ZENITH • LOTUS • MAXTOR

IBM • COMPAQ • HP • NEC • AST • INTEL • EPSON • TEAC • SEAGATE

IBM

Model 30-2 drive	$1359
Model 30-20 MB	$1799
Model 50-20 MB	$2768
Model 60-44 MB	$4077
Model 70-70 MB	$4847
IBM PC AT 339 30 MB	$3520
IBM PS/2 14″ Color (8512)	$504
IBM PS/2 12″ Color (8513)	$548
IBM PS/2 14″ Color (8514)	$1192

Seagate ST225

20MB w/controller **$259***

QTY 5 Cash Price Installation Available

HEWLETT PACKARD

LASER JET S II	$1695
HP PLOTTERS ALL MODELS	
HP SCAN JET	$1225
HP QUIET JET	$BEST
Fonts, tray available	
Toner	$83
Legal Tray	$62
Memory Exp/1MB/2MB	$398/783

HARD DRIVES

Seagate ST225 20 MB w/Ct.	$259
Seagate ST238 30 MB w/Ct.	$299
Seagate ST4038 AT	$499
Seagate ST251	$429
Miniscribe 6053 44MB 28MS.	$599
Miniscribe 6085 71MB 28MS.	$799
Atasi 3046 39MB	$399
Maxtor 1140 140MB	$1995

COMPAQ

386 Model 40 MB	$4572
386 Model 70 MB	$5320
386 Model 130 MB	$6790
Portable III 20 MB	$3999
Portable III 40 MB	$4699
268 Model 1 12 MHz	$1995
DeskPro Model 2 2Dr.	$1079

EPSON

LX-800 9 Pin-Narrow	$189
EX-1000 9 Pin-Narrow	$339
FX-286E 9 Pin-Wide	$449
EX-800 9 Pin-Narrow	$399
EX-1000 9 Pin-Wide	$565
LQ-800 24 Pin-Narrow	$479
LQ-1000 24 Pin-Wide	$685
LQ-2500 24 Pin-Wide	$899
GQ-3500 Epson Laser	$1499
Tractor & Cut Sheet Feeder	Available

AST COMPUTERS

Ast Premium 286 AT Model 80	$1535
Ast Premium 286 AT Model 120	$2395
Ast Premium 286 AT Model 140	$2695
Ast Premium 286 AT Model 170	$3195

INTEL

80387-16	$489
80287-10	$299
80287-8	$245
Intel 286 (512K)	$387
Intel Inboard	$1203

FLOPPY DRIVES

Toshiba 3½″	$108
Fujitsu 360K	$69
Fujitsu 1.2 MB	$98

SOFTWARE

Lotus 1-2-3	$302
Xerox Ventura	$449
IBM DOS 3.3	$97

PRINTERS

IBM ProPrinter	$382

CITIZEN

120 D	$169
MSP-10	$257
MSP-15	$325
MSP-25	$392
Premium 35	$415
Tribute 224	$565
Citizen Printers All Models	Best $

HARD DISKS

Miniscribe

3425 20 MB w/cont	$289
3650 40MB	$342
6053 44MB	$599
6085 72MB	$789
WD 1003-WA2 Hard & Floppy Controller	$129
Watson Voice Recording Sys	$472

MISC

Wyse Terminals	Best $
Plus Card 20MB	$615

LAPTOP COMPUTERS

NEC Mutlispeed	$1299
Zenith 181 2 Dr	$1675
Zenith 183-92 (10MB)	$2460

TAPE BACKUP DRIVES

Irwin 110 10MB	$219
Irwin 120 20MB	$375
Irwin 145 40MB	$405
(New) Archive 40MB	$329

Talltree JLaser — Still a Great Value

The original HP Laserjet (and similar lasers built on the Canon engine) are still widely used.

But the desktop publishing performance with 300 dpi graphics is awful.

We suggest the Talltree JLaser interface combined with the Talltree JRAM memory card. This looks to your computer like an EMS RAM card, but transfers data direct to the printer's laser head. Speed improvement > 15 x.

The memory card with 1 MByte RAM (expandable to 2 MByte), the piggyback laser interface, and the HP style cable (automatically switches between JLaser and conventional serial port); package price $475.

This Month's Special

FREE Desktop Publishing Software.

For limited time only from Quality Micro w/ purchase of Logitech Mouse. List Price $299

Our Cost **$149**

POLICIES:

- Blue Label or Next Day Delivery Available
- Letters of Credit & Corporate Accounts Accepted
- We accept certified checks, cashier checks, wired funds
- All orders over $500 must be paid by cashier check.
- Minimum order $100.
- Allow 1 week for personal & company checks (maximum amount-$500)
- Prepaid orders get 1% discount
- Add 3% for Visa/Master Card Purchases
- Allow one week for shipping
- 15% Restocking Fee On all return merchandise

QUALITY MICRO

(213) 474-3764

VISA

master charge THE INTERBANK CARD

800-553-3339 in CA orders only

1-800-MICRO 86 (642-7686) in U.S.

West Coast Office 10551 W. Pico Blvd., Los Angeles, CA 90064

East Coast Office 313 Post Ave. Westbury, NY 11590 516-338-4949

For Technical Service Call Watson Line (213) 470-8073

See you at COMDEX/Fall '87
Nov. 2-6, 1987, Las Vegas, NV
Booth R8101

All prices subject to change without notice

When you need competitive prices, prompt service & complete support, call us.

*Quantity 5 cash price, installation available

IRWIN • ARCHIVE • MINISCRIBE • KURTÀ

Multispeed

The NEC Multispeed And Multispeed EL

Power And Functionality With Or Without Your Desktop

By Wayne A. Yacco

Once a curiosity, incapable of handling heavy-duty desktop applications, the typical laptop now has power comparable to an XT, and often beyond. These machines are completely portable, but can be used with external peripherals at the office desk for nearly perfect ergonomic comfort. They are also more likely to contain a hard disk.

The best news is that sophisticated IBM-compatible laptop computers have fallen in price to the point where they're affordable for just about anyone considering the purchase of an XT. Those prices begin at less than $900 and include a single drive and the display. For slightly more (at street prices), turbo speed, a second drive, and built-in software can be had.

I recently had the opportunity to work with one of the better of these true portables, the NEC Multispeed, over a period of several months. I worked in the field with its built-in software, substituted it for my desktop machine, and used the laptop's disk drives as external drives for my desktop.

HARDWARE FEATURES

For under $2,000 list, the Multispeed delivers not only all the power most users want, but all the power they can use. This is a turbo machine (9.44 MHz clock speed) with scrolling that seems as fast as that of an AT. Since most laptop computing is likely to be interactive and I/O bound, rather than compute bound, typical users may not benefit from the additional speed of an 80286-based machine. Certainly, most will not benefit to the extent of an additional $1,500.

This laptop includes serial and parallel ports as standard features. My test unit also included a 1200 bps modem. A full 640 KB of memory is standard. Part of the base memory, 128 KB, is CMOS, which can be allocated to a ramdrive.

The available ramdrive, C:, is not distributed by resetting or powering down the system, so, it is a convenient working area for virtually instantaneous file saves. Using it further conserves power since the drive motors are idle more often. At the end of a session, it is not necessary to copy files from the ramdrive to a diskette unless the battery is to be removed or it is ready to run out of energy. If migration is overlooked occasionally, the file will usually still be there the next time the system is started. (Running the setup program to change memory allocations also causes a data loss in the ramdisk.)

I was disappointed that the CMOS allocated to the ramdrive was insufficient to hold most of the operating system. A second missed memory opportunity was the use of the video address space. Since this laptop offers no expansion slots on its bus there is no reason not to use some of the memory-address space which is normally reserved for EGA video.

The NEC system has the ability to skip the ram-test part of the power-on self test (POST). Users with memory-laden ATs or 80386 deskframes will immediately wonder why this feature isn't standard on every machine, particularly those with an eight-to-sixteen-megabyte behemoth.

Any system can be made to crash if the user is careless enough. At that point, the user will appreciate the reset button provided on the back of the unit. There is one complication, however. After hitting that reset button, failing to execute the COLD.COM program can cause all sorts of gremlins to rise from their estivation. At that point, the user will appreciate the reset button.

The Multispeed's display is relatively easy to read due to the twisted-crystal technology employed in its design. However, at the spring COMDEX this year, NEC unveiled the $2,499 Multispeed EL. This model incorporates a new LCD display with electroluminescent backlighting.

With the aid of electroluminescence, available background lighting is no longer a factor. The EL display should be much easier to read in situations such as the one I am in while writing this copy in the air. While the standard unit rests on the lap tray of a Super 80, it is impossible to aim the fixed cabin reading lights directly on its screen. The user's eyes are quickly fatigued as a consequence.

Fortunately, the new screen is available as a $499 upgrade for existing machines. Since all of the EL's enhancements are contained in the display itself, and the upgrade price is equivalent to the difference in the two machines, early purchasers do not pay a premium. NEC's EL display also features a friction lock that positions the screen at any angle. The original design is very prone to damage if it is forced to move in the wrong direction once it has been adjusted.

The EL display offers features which improve its utility in a variety of situations. For example, after ten minutes the backlighting automatically turns off. There are also three slide switches. One allows the electroluminescence to be turned off to conserve power; in use, it cuts battery life almost in half, but it isn't required in brightly lit environments. The other two switches consist of the standard LCD's contrast control and a newly added brightness control.

Most portable keyboards are dismal when compared to that of a desktop. On this machine, the home row is easily found with the index fingers because NEC has dished the "F" and "H" keys. This is a clever little feature that a touch typist may appreciate on the slightly smaller keyboard. Tactile response is missing though.

FIELD USE

Of course, the main thing that anyone wants a laptop for is topping their lap somewhere out in the field. Why else would we settle for little toy keyboards and a lack of expansion slots? NEC caters to that need with a high-quality, padded-nylon carrying case. There is both a handle and a shoulder strap, in addition to a separate case for diskettes that attaches to the larger case's straps.

I tested this case when I attended the West Coast Computer Faire not long ago and again more recently at COMDEX. Although the computer is very lightweight, when you add manuals and several boxes of diskettes, it adds up to about twenty pounds. By the time you've toured two airports, and shuttled out to a hotel, you've got a grip on both handles. It's a good design; both my hand and my shoulder survived. It also fits easily under most aircraft seats (except some aisle seats with narrow designs — check when you book) and it's easy to open and operate during airport-security checks.

Speaking of airport-security checks: Here's a lesson in something to avoid with the Multispeed. The back of this unit sports a very handy little recessed switch that allows the user to conserve battery power for prolonged periods of storage. It is labeled "Back Up Power Off On." My understanding was that it disabled power from the CMOS memory used by the ram disk, but I had not used it before the flight to COMDEX.

While preparing for the flight to Atlanta I decided to turn this back-up switch off. Needless to say, it had completely slipped my mind by the following morning as I prepared to board my flight. Until, that is, a security officer asked me to turn on the machine. It is standard airport procedure to activate sealed electronics and assure that all is what it seems.

When the unit failed to start immediately, my first assumption was a dead battery and we connected the external power supply between an outlet and the Multispeed. The screen remained blank. It didn't take me long to realize what I had done, perhaps a second. That hidden switch had actually shut down everything including the main power.

As I turned to explain, the expression on the guard's face was anything but its former smile of friendly assistance. His eyes seemed to say "Oh yeah, sure..." and I could feel them pressing on my back like a double-barreled shotgun while I sweated and fumbled over that miniscule slide switch. There may have been some significance in the fact that the instrument he offered to help me reset the switch with was a tiny key — a handcuff key.

What the guardian of the airport briefly contemplated was apparently a bit of lost freedom for Yours Truly. A portable need not commit a clumsy *faux pas* to experience the same effect. It loses some of its freedom of movement with every accessory that must be toted along, including manuals.

Studying the manuals in advance can partially alleviate the situation, but most users would probably ben-

Mac II Best Buy !

At **Computer Terminal**, we have the best prices, best service, and best support system in Los Angeles.

Apple® computers are the only computers we sell, and that's how we do it.

Why buy from a computer dealer that offers Macintosh as a SECOND line?

We ARE the Macintosh and Macintosh II *Experts!*

Macintosh II

Come see the new Macintosh II... there's alot to see. *Six* 32-bit internal expansion slots that let you, upgrade and configure the Macintosh II. A microprocessor that lets you see results four times faster then ever before. And a special math chip that makes calculations 200 times faster.

All this plus new color monitors, keyboards, drives and... well, you must see it for yourself!

For MicroTimes™ Readers Only

Bring this Ad to Computer Terminal to receive Absolutely the Lowest Price in L.A. County!

We will beat all Authorized Apple Dealers. Positively no phone quotes! No verbal quotes, no written quotes and no sale prices without this ad!

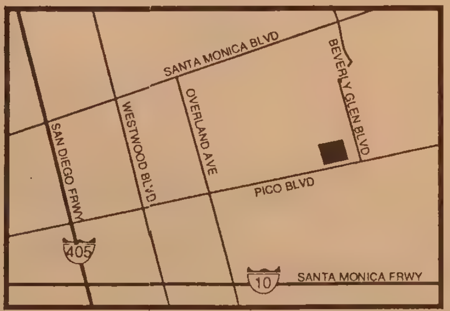
Computer Terminal

10517 West Pico ◊ Los Angeles ◊ (213) 474-6409

Apple Experts from the beginning

Authorized Dealer

© 1987 Computer Terminal
The Apple and the Apple logo are registered trademarks of Apple Computer Inc. Macintosh is a trademark of Apple Computer Inc.



3F

ASSOCIATES INC.
(415) 659-0403
FAX 651-9190

AUTHORIZED EVEREX MAIL ORDER HOUSE
ORDER DESK 1-800-445-1900

EVEREX BLOWOUT

★ SALE ★
THIS MONTH ONLY

MICROENHANCER EV-657 $\$145^{00}$
EGA ★ CGA ★ MDA HERCULES COMPATIBLE

DON'T PASS UP

RAM 3000 EV-135 ONLY $\$115^{00}$
3MB MEMORY EXPANSION BOARD FOR AT

60 MB EXTERNAL TAPE BACKUP SUBSYSTEM $\$699^{00}$
EXCEL STREAM TAPE BACKUP WITH CONTROLLER CARD & SOFTWARE

BACK TO SCHOOL SPECIAL

3FAT-12 (EVEREX SYSTEM 1700) AS LOW AS $\$1599^{00}$
12 MHZ ZERO WS MONOGRAPHIC AT COMPATIBLE SYSTEM
- STANDARD 1MB MEMORY/
- NORTON SI:15.3/
- S/W SELECTABLE SPEED & WAIT STATE

NEW

INTERESTED IN MULTI-USER MULTI-TASKING?

ASK US ABOUT

IE™ 286/386 SYSTEM SOLUTIONS

★ OPERATING SYSTEMS

SYSTEM V/AT & V 386 — **MICROPORT SYSTEMS, INC.**
A fully licensed and complete version of AT&T's Unix 5 with all the utilities.

DOS MERGE 286 & 386 — **MICROPORT SYSTEMS, INC.**
Makes DOS applications available to Unix on the same disk without partitions.

PC MOS/386 — **THE SOFTWARE LINK**
The DOS like Multi-User, Multi-Tasking System.

★ SOFTWARE APPLICATIONS

PROGRESS — **DATA LANGUAGE CORPORATION**
4th generation data base management and application development language, with a wide range of specialized applications available.

UNIPLEX II — **REDWOOD INTERNATIONA LTD.**
Combination of office programs for the Multi-User system with word processing, spreadsheet, data base and schedule planner.

LINKS PCs TO FACSIMILE MACHINES

ALSO AVAILABLE NOW

GAMMAFAX

COMMUNICATION PRODUCT

CALL

LOOK ONTO THE NEXT PAGE AT OUR HUGE INVENTORY FOR YOUR ONE-STOP-SHOP CONVENIENCE

CALL US • WE SHIP ANYWHERE IN USA & CANADA

44100 OLD WARM SPRINGS BOULEVARD • FREMONT, CA 94538

3F ASSOCIATES INC.

PLEDGES TO YOU . . .

QUALITY BRAND NAME EQUIPMENT
SERVICE COMPLETE TECHNICAL SUPPORT
&
PRICE AFFORDABLY LOW

CORPORATE LEASING AVAILABLE

3FAT-10

10 MHZ MONOGRAPHIC SYSTEM

$1234

EVEREX SYSTEMS

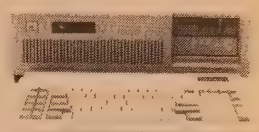
- Fully IBM Compatible with AMI BIOS
- 1.2MB FDD
- Option Math Co-processor 80287
- 1 Year Warranty
- Made in USA
- 1.44MB 3.5″ Drive (Option)
- 720KB 3.5″ Drive (Option)
- Mono Monitor
- Mono Graphic Card
- 8/10 MHz CP
- 1024KB Memory, (optional) 512K standard
- Hard Disk/ Floppy Controller
- Maxi Keyboard
- 192W Power Supply
- Clock Calendar w/Battery Backup

3FAST-286

10 MHz ZERO WAIT STATE

CALL

Call for IBM Computers



- INTEL 80286-10 CPU
- 6/8/10 Keyboard Switch Selectable
- 512K Standard
- Hard/Floppy Disk Controller
- Clock/Calendar with Battery Backup
- 1.2 MB Floppy Drive
- AT Style MAXI SWITCH Keyboard
- Serial & Parallel Port
- 192 Watt Power Supply
- One Year Limited Warranty

Faster than the fastest PC AT & Compatible

XT COMPUTERS

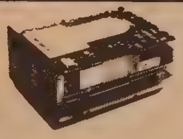
- 8088 CPU
- 4.77/8MHz Software Switch Selectable
- 256K Std.
- 360KB Floppy Drive
- 150W Power Supply
- Floppy Disk Controller
- Keyboard AT Style
- FCC Class B Approved

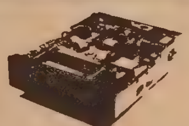
TURBO 3F XT

$399

CALL FOR 10 MHZ-XT

HARD & FLOPPY DISK





ST225 w/Controller Card and Cable for XT **(Special)**	**LOW**
ST238 w/Controller Card & Cable	**339**
ST225 Half Ht. Drive only	**249**
ST238 Half Ht. Drive only	**299**
ST251 40MB 39 ms Half Ht.	**549**
ST4026 20MB 39 ms Full Ht. Drive only	**449**
ST4038 30MB 39 ms Full Ht. Drive only	**545**
ST4096 80MB 39 ms Full Ht. Drive only	**CALL**
ST4051 40MB 39 ms Full Ht.	**575**
TEAC 360K/1 .2 MB	**85/125**
TOSHIBA 3½″, 720K/1.44MB	**CALL**

LAPTOP COMPUTERS

Zenith 181
• 4.77/8MHz • 2 3 1/2″ 720 KB PD • 640 KB Memory • 12″ Screen • 1 SR/1 PR Port

CALL

PS/2™ Compatible Prod.

- WIREWRAP CARDS
- TECHNICAL DETAILS
- DESIGN EXAMPLES
- EXTENDER CARDS
- BRACKETS

CALL

MONITORS

NEC MULTISYNC	**549**
Hi Res Mono Monitor w/Swivel Base	**95**
TATUNG Hi Res EGA	**465**
SAMSUNG Hi Res EGA	**385**

HARD DISK & TAPE BACKUP SUBSYSTEMS

EVEREX

20MB Tape Backup Int/Ext	**CALL**
60MB Ext W/CNTRL CRD & SW	**CALL**
60MB Int W/CNTRL CRD & SW	**CALL**
50MB Floppy Tape B/U Int	**CALL**

MEMORY

EVEREX BOARDS

3F-136 4MB for IBM PS/2	**CALL**
3F-138 Mem Expn Short Card for PC/XT & Portable	**$45**
3F-165 0-2 MB LOTUS/INTEL/ MICROSOFT/Expanded Memory for PC/XT/AT	**149**
3F-173 Mul Fun EMS Brd LOTUS/INTEL/MICROSOFT/Expanded Memory for PC/XT or AT Compatible 1 SR Port Standard, 2nd optional/GP	**179**
3F-125 OK-2MB Memory 1 SP Standard, 2nd optional/GP	**159**
3F-135 3 MB Mem Expn Brd for AT	**115**
3F-100 Six Pack Compatible	**$99**

GRAPHIC CARDS

3F-221 Monographic with Printer Port	**$99**
3F-657 Micro Enhancer EGA/CGA/MDA Herc Compat	**145**
VEGA Deluxe 640 × 480 Hi Resolution	**299**

HARD DISK CONTROLLER

Hard Disk Controller for XT Controls 2 HD Up to 160MB	**$69**
Hard Disk Controller for AT Controls 2 HD and 2 FD	**160**
Hard Disk Controller for XT Controls 2 HD and 2 FD	**139**

PRINTERS

NEC PINWRITER	**$449**
CITIZEN MSP 10/15	**$285/385**
C. ITOH 310P 300 CPS LQ	**499**
TOSHIBA P321SL	**CALL**
EPSON 86e	**349**
EPSON 286e	**CALL**

CALL for Plotters & Laser Printers

MULTIFUNCTION CARD

3F-170 Mini I/O for XT w. CLK CLNDR/BAT. BKUP/SP/PP	**$65**
3F-170A Mini I/O for XT/AT	**70**
3F-170B Mini I/O for PC/XT/AT w. 3 SP/1 PP	**75**
3F-170C Combo I/O & FDC for PC/XT	**95**

All 3F Boards are Everex Products

MISCELLANEOUS

Expansion Chassis for PC/XT/AT	**$425**
Optical Mouse	**99**
Power Supply FCC Class B Approved 150/200	**85/135**
4 Way Printer Switch	**59**
Generic CADD	**99**
DOS 3.2/GW BASIC	**93/93**
Keyboard IBM Enhanced Type	**85**
80286 Turbo Brd PC/XT	**299**

EVEREX MODEMS

300/1200 Baud Int w/S/W Hayes Comp.	**CALL**
1200/2400 Baud Int/Ext Hayes Comp.	**199/239**

3F
44100 Old Warm Springs
Fremont, CA 94538

CALL (415) 659-0403
FAX (415) 651-9190

VISA MasterCard AMERICAN EXPRESS

Visa, MC, Am Ex Accepted

FOR DELIVERY IN THE USA & CANADA

Dealers are Welcome

POLICY: Returned items must be as-new, not modified or damaged with all warranty cards, manuals & packaging intact. Returned items must be shipped insured and bear a 3F return authorization (RA) on shipping label. Call for RA No. No credit issued after 30 days of shipment

We reserve the right to substitute with equivalent items
Prices subject to change without notice
Prices based on C.O.D. orders

With superior display, ergonomic design, and all the power most users need, the NEC Multispeed and Multispeed EL (with screen display) may actually eliminate your need for a desktop computer.

efit from the inclusion of a quick-reference card. One that would fit exactly within the recessed area of the screen would allow easy storage during movement.

Instead of a reference card, the Multispeed has a help facility. Its screens are wonderful tutorials for the novice user. Help is invoked with a dedicated key. That's convenient.

One thing to consider in purchasing a laptop that will actually be used in field situations is the depth of the machine. The longer the unit is, the longer the lap must be. If the lap length is too short, the heavy rear end of the Multispeed tends to make it want to slide off over the knees. Something that no one should have on their lap when using one of these machines is my stomach.

A laptop's usefulness is not limited exclusively to working in the field either. Another time the Multispeed came in handy was right before a deadline when my AT's hard disk went out. Rather than move equipment off of my desk, I set up shop on a couch. I used the Setup menu to choose CRT output and plugged into a Thomson Ultrascan on the coffee table. The monitor automatically switched to the laptop's CGA output.

BUILT-IN SOFTWARE

The Multispeed's built-in software is fairly useful. In the air, I was able to use the machine for taking notes and working on some files that had been started earlier. The software resides in the NEC's 512 kilobytes of read-only memory so the drives are free to hold the operating system and work files. Programs include a notepad, filer, outliner, dialer and a setup program for video, speed, ramdisk, and other configuration options.

I found the notepad to be quite satisfactory. Aside from mail merge and formatting facilities, there isn't much separating it from many full-fledged word processors. One of its few annoying limitations is its inability to specify path names.

Notepad commands are not quite familiar but are easily assimilated. A good test for this is to try finding all the commands without the manual. Some *Wordstar* keystrokes work; some commands are similar to other major word processors; many of the rest are intuitive. Commands for cut and paste, search, and spell checking, among many others, are invoked by the function keys. Fortunately, the complete list is available with a single stroke of the help key.

The help screens are less effective when it comes to offering instructions for command usage. For example, if the user wants to display the disk directory from within the notepad, HELP advises the display of the DIRECTORY WINDOW. Unfortunately, the manner in which this is accomplished is one of the less obvious notepad protocols, and it is not explained. A user familiar with Microsoft *Word* will have an advantage because the arrow keys are used, from within the load command, in a manner similar to that of the Microsoft program. Otherwise, the manual must be consulted.

For *MS Word* users, one of the slightly less-intuitive variety of commands is Ctrl-PgDn to move the document, rather than the window, down. This leaves the cursor at the top of the document, which is what you might expect from the inverse command, Ctrl-PgUp. PgUp and PgDn work the same way for single page movements.

The pop-up notepad lacks the ability to retain data, the way that *Sidekick* does when it is not active. This makes it impossible to leave the notepad and change directories before saving a file. Files can only be saved to the current directory, or to the root directory, of a specified drive. The notepad, and several other built-in programs, can also be implemented as a stand-alone application with access to an unlimited portion of available RAM.

The integral spelling checker is vaguely reminiscent of *MS Word*'s, but much easier to use because it is online. Its instantaneous response when checking a single word, a portion of a document, or an entire document, provides a great deal more utility than the checker that is part of *Word*. Unfortunately, RAM residence limits it to a tiny dictionary that is only useful for catching common typographical errors. It has difficulty with a great many words, including simple variant forms such as plurals.

NEC has included the ability to create user-defined dictionary supplements, but the gap between the 20,000 words provided and the 80,000 or 100,000 words available in full-featured spelling checkers is too wide to bridge unless you're a direct descendant of Noah Webster. The supplement must also reside in memory, on the limited ramdisk, so even the master lexographer himself couldn't really help much. Perhaps a diskette-based dictionary will be forthcoming. Otherwise, the documents can simply be checked on the desktop.

There are three other applications. A simple filer is included that can create card-file-type records with little effort. An outliner helps to create notes in a structured outline. The dialer may be used in conjunction with the built-in modem to place calls automatically.

FILE SHUTTLE

File Shuttle provided the fastest transfers, considerably faster than some. Files are moved over the parallel port. The program comes with a special adapter that converts the Centronics-type connector, on the business end of the printer cable, to a 25-pin D-shell connector that will plug into the printer port of the second machine. Since there is no need for a special cable, it is very portable.

Getc Software's package works *from* either machine *to* either machine. Both machines must be set up with the program; then one must be chosen to send, the other to receive. To call it simple to use would be an understatement.

File Shuttle also has the ability to transfer files through the serial port using a full-handshake null-modem cable, but I experienced difficulties that prevented me from using it successfully in this mode. Getc blames my cable for this. However, since it was necessary for me to construct the special cable, it still amounts to a problem with the package, whatever the cause. (Note: All of my other custom cables have worked in the past.)

BROOKLYN BRIDGE

Brooklyn Bridge was the second fastest of these programs. A simple crossover cable is all that is required to connect the laptop to the other machine. Although it transmits over the serial port, a single bit at a time, *Bridge* is very nearly as fast as *File Shuttle*.

There is considerably more setup required for this system. A program must be run on one machine, which then becomes a slave to the other. The maste, or host, machine must then be reinitialized with one or more drivers specified in the CONFIG.SYS file. Drives on the slave are then referenced by new designators that consecutively follow the native devices of the host unit.

After the adjustments are made, the remote drives are referenced in commands just as though they were local to the host machine. Files can not only be transferred by the COPY command, the full complement of DOS functions can be used on them. Thus, the additional effort required to use *Brooklyn Bridge* is rewarded with extra functionality.

LAP LINK

This program also requires a crossover cable to connect the laptop's serial port to a desktop. In practice, a single program is run on both machines. It splits the screen in two on each monitor, with one machine's current directory shown on each side of the screen. Files or directories are identified with a cursor, and actions are carried out according to selections from a menu across the bottom of the screen.

Lap Link is, perhaps, the most reliable of these products. Some serial

It's a real jungle out there.

AST
IBM
NEC
RGB
K. Cholodenko '87

RGB Has ALL Your Answers!

We've been here for 4 years and we've got what it takes to survive
Quality - Integrity - Selection - Service

The **U.S. Government** trusts us with their business and YOU CAN TOO!

AST Premium 286 AT . . . $2359

- 6/8/10 MHz
- 1.2 MEG FLOPPY
- 1 MEG memory
- 40 MEG Hard disk
- EGA Adapter
- EGA Monitor
- DOS

We also carry:

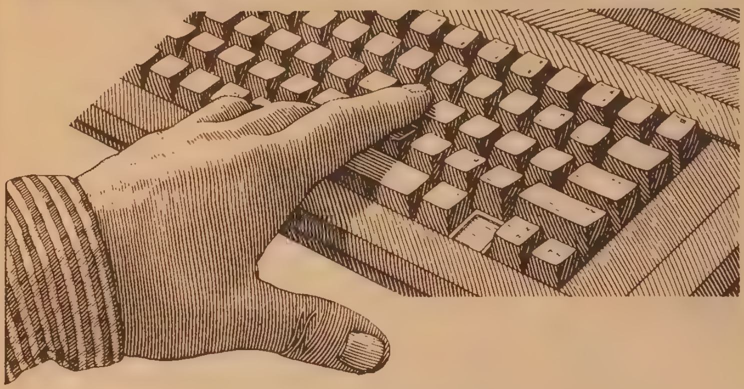
IBM
Compaq
Kaypro
Hard Disks
Epson
Toshiba

NEC P6 Printer	$475
Toshiba 321 SL	$525
HP Laser Series II	$1695
QMS PS Jet Plus	$4195
Hayes V Series 9600 Modem	**Call for Details**

RGB Computing

1111 E. Chevy Chase Dr., Glendale **(818) 240-0422**
5612 W. Manchester Ave., Los Angeles **(213) 215-3828**

2 EXCELLENT SYSTEMS



$799
286 System

DTK 6/10 MHz Motherboard, Intel 80286-10 CPU
1 MB Memory size w/ 512K on Board
360K Floppy Disk Drive w/ Controller
Monochrome Graphic Card
200 Watt Power Supply
AT1000 Case
Printer Port, AT Style Keyboard
Hi-Res TTL Monitor w/ Swivel Base
Upgrade Options:

Super FDC and 1.2 M FDD	add $50
512K/640K/1024K	add **36/64/108**
20 MB HDD w/ WAll controller	add **300**
AT I/O package (S/P/G)	add **42**
Color Package	add **180**
EGA Package	add **380**

$475
XT TURBO

DTK 10 MHz Turbo Motherboard
256K RAM on board
One 360K Floppy Drive w/ controller
Monochrome Graphic Card
150 Watt Power Supply, AT/XT Case
Printer Port, AT Style Keyboard
Hi-Res TTL Monitor w/ swivel base
Upgrade Options:

Second 360K Floppy Drive	add $75
640K RAM	add **50**
Color Package	add **180**
EGA Package	add **380**

Misc. Items

10 MHz XT 2 Layer Board (0 RAM)	$89
Game Card	14
Printer Card	14
RS232C	20
4 Serial Port (AT) Card	65
Disk I/O	55
2MB EMS Card (XT/AT)	69/79
KB 5060 Keyboard	35
KB 5339 Enh. Keyboard (BTC/Maxi)	55/65
AT/XT Flip Top Case	35
AT Baby Enhanced Case	45
Power Center	20
Logicmouse	69

The following items are in stock.
Come in and browse. Parallel/Serial Cables • Monitor Cables • Power Supplies • Power Cords • Gender Changers • Cable connectors & hoods • Monitors • V20 Chips • XT & AT Boards • Memory Cards • Keyboards • Printer & Monitor stands • Toolkits • Switchboxes • Floppy & Hard Drives • Eproms • RAM chips • Support boards

EXCEL COMPUTER INC.
Retail & Wholesale
(818) 309-9986
4124 ROSEMEAD BLVD #A ROSEMEAD, CA 91770

ports caused the other alternatives to fail due to incompatibility. This system failed only on a PS/2, and Traveling Software claims that the next release will solve that problem. It apparently pays for this reliability by being fairly slow. If the volume of data to be transferred is not great, then this may be tolerable and offset by the ease of use.

TRANSFERRING WORK TO THE DESKTOP

There was just one minor complication with my trials of NEC's laptop. The Multispeed uses those newfangled 3.5-inch diskettes and the other systems in my office have no fangs (they use 5.25-inch floppies). That implied two things. One, there were no media available for testing purposes and, two, the Multispeed couldn't exchange files with my main silicon through the exchange of diskettes.

The first problem was fairly easy to solve: I got some new diskettes. Because micro diskettes use a high-coercivity coating, and record at higher density than ordinary mini diskettes, I was concerned with media quality. The smaller radius of the micro floppy disk requires spacing of 135 TPI (tracks per inch) compared to 35 – 96 TPI for the larger mini floppies. I tried two brands, Memorex and Centech, for my tests and each performed flawlessly. Both were brand names that I had used before.

While I wrote this on the Multispeed, I did not want to apply the final polish there. My preference is to use *MS Word* or *WordPerfect* for formatting. That allows me send the output to my laser printer formatted with one of the several printer codes supported by the Mannesmann 910's emulations. It also gives me access to the additional spell-checking power discussed earlier. However, my hard disks have spoiled me for swapping diskettes when I can avoid it, so that means getting files from the lap to the desk.

Modems offer an answer to this minor dilemma, but they require familiarity with telecommunications protocols and setting up complex programs on both machines. A superior solution has recently come on the scene in the guise of several transfer programs.

One of the things I did at the Computer Faire was to obtain several of these to test. They included *Lap Link*, *Brooklyn Bridge*, and *File Shuttle*. Each of the new products was capable of moving files from one format to the other and each had its advantages and disadvantages. All three of them provide software (in both 3.5 and 5.25 formats) and a crossover cable or, in the case of *File Shuttle*, an adapter to connect a printer cable between two machines.

One other product tested was *The Knowledge Network*, and it did not have files in both formats. Its files have to be transferred, by modem or another program, before it will run on the laptop. Cables are replaced by standard four-conductor telephone wire.

THE KNOWLEDGE NETWORK

This networking system is not specifically designed for use in the transfer of files between laptops and desktops. The *Network* comes with its files on 5.25-inch diskettes only, and that makes it necessary to copy files to the smaller-format media before it can be used for further transfers of other files. Its advantages include the ability to use all nodes independently, to use all DOS functions, and to effect transfers between multiple nodes simultaneously. The cost for this functionality is slowness.

The Knowledge Network uses modular telephone connectors and wiring. Attachments are made, via special 25-pin D-shells, to the serial ports of the machines on the network. It requires first that drivers be installed during system initialization, then further configuration with another setup program to designate drive identifiers. The result is similar to that of *Brooklyn Bridge*, except that the possibilities for confusion are multiplied by the number of nodes on the system. Each node potentially references drives on the other nodes by different designations than do all others.

SUMMARY

The NEC Multispeed, and other new laptop designs, have removed this type of system from its former domain of limited applications and placed it into the power category of full sized microcomputers. Advances in ergonomics and integrated utilities make using a laptop nearly as productive as an office system. Their greatest potential comes from easy integration with desktop computers which allow full utilization of peripherals and large application systems. □

Product Information

Lap-Link
Traveling Software
19310 North Creek Parkway
Bothell, WA 98011
(206) 483-8080

The Brooklyn Bridge
White Crane Systems, Inc.
6889 Peachtree Industrial Boulevard,
Suite 151
Norcross, GA 30092
(404) 454-7911

File Shuttle
Getc Software Inc.
1269 Howe Street
Vancouver, B.C.
V6C 1R3
(604) 687-3606

The Knowledge Network
Applied Knowledge Groups, Inc.
1095 East Duane Avenue, Suite 203
Sunnyvale, CA 94086
(408) 739-0300

We manufacture and develop all our software . . . since 1979!

BitFire®

UNIQUE • DISCOUNT • SOFTWARE

IBM PC/XT/AT and SYSTEM 2

Software and Books at prices you cannot find elsewhere. Fight the high prices of PC Books and Software!

Framework
Applications Tips & Tricks

Introduction Applications Tips & Tricks

Statistics on the IBM

FRAMEWORK APPLICATIONS, TIPS & TRICKS
"Introduction to Framework" plus macros plus 10 application templates from Statistics to Business. Includes Disk and 180-page book.
Order #5902 **$14.95**

SMALL BUSINESS PROGRAMS FOR THE IBM-PC/XT/AT
112-page book containing 18 very useful ready to run BASIC programs. Includes disk.
Order #5202 **$14.95 (incredible value)**

MS-DOS INTRODUCTION, APPLICATIONS, TIPS & TRICKS
This book contains everything you need to operate your PC/XT/AT. Ideas and solutions that go beyond the manual. Lots of sample programs and utilities; 178-page book together with a disk containing all the programs from the book.
Order #5602 **$14.95**

STATISTICS ON THE IBM
Everything you need to know about statistics. Includes discrete statistical distributions, statistical tests, nonparametric methods, analysis of variance, linear regression, multiple lin. regr., autocorrelation, curvelinear regression, and predictions and trends; 200-page book with disk containing all the programs from the book in BASIC. An excellent value!
Order #4702 **$14.95**

UNIX, XENIX INTRODUCTION
206 page introduction to UNIX. Describes the most important UNIX commands and uses many easy to understand examples.
Order #64, 206-page book only, no disk **$9.95**

SYMPHONY APPLICATIONS
A short course provides a quick introduction on how to use this powerful tool. After that you will find very useful applications such as inventory control and invoice writing, statistical applications, planning and timing problems and solutions and much more. Package includes Disk and 184 page book.
Order #5302 **$14.95**

LASER-SET
Professional Desktop Publishing. Full blown package includes WYSIWYG, comes with 12 downloadable fonts, supports postscript.
Order #688 Regular $199, on sale $149.00

IT FIGURES
The UnSpreadsheet gives you instant results with 75 ready-to-run financial, business, and personal applications. Get the simplicity of a programmable calculator with many spreadsheet features.
Order #689 Regular $49.95, on sale $29.95

High Quality, Super LOW COST Software for IBM-PC/XT/AT. Also works on new System 2. Each package contains 5.25 inch disk, manual, and shrink-wrapped plastic binder. The programs are not copy protected!

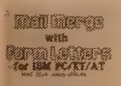
Super Mailing List
Very powerful, easy to use Mailing List. Prints lists and labels. Select by any field. String search in the first two fields. Very fast, even with more than 5000 addresses; 2000 addresses on 5.25 inch disk hard disk to 50,000 or more
Order #9500, **$14.95**

Mail Merge Program to Write Form Letters
Same as above, but includes mail merge capability to write and store form letters and mail to selected or all addresses from the mailing list. ASCII letters from other programs can be used. Disk and 36-page manual.
Order #9503, **$24.95**

Index Cards
A sophisticated data base, where each entry is a keyword!
Type your date into a window and search and select by any entry, string, or part of a string. Incredible power. Thousands of applications. Very easy to use. You will get 3 programs with different window sizes. Up to 1024 characters per window.
Order #9504, **$19.95**

PC-Letter
A very powerful letter writing program
Combines a mailing list with a very easy to use form letter writer. Provides letterhead- and endings options. Prints address label on push of a key. Note pad allows a 120 character note in connection with each address.
Order #9502, **$24.95**

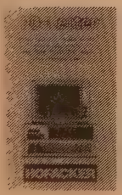
Property Manager
Instant relief from landlord's headaches.
Includes accounts payables, accounts receivables, mail merge, check writing, automatic late payment letters, and much more.
Order #9510, **$49.00**



Check Manager
Provides automatic check writing of all your checks.
Order #9511, **$19.95**

Super Easy Accounts
Very easy to use income/expense accounting system.
Order #9512, **$19.95**

Super Mailing List with Notepad
Same as Order #9500 but each address has a notepad "attached" to it. 120 or 860 characters of text can be added to each address.
Order #9501, **$19.95**



Busipack
Integrated package provides mailing list, inventory control, and invoice writing. Full BASICA source code is supplied.
Order #521, **$12.95**

PC-Laptop-C64 Link
Connect laptops, PCs, and Commodore 64 computers and transmit data files. Includes cable, software and instructions.
Order #9513 **$49.00**

DEALER INQUIRIES INVITED. Ask about our Dealer Starter Pack.

Also available from: ACP, Advanced Computer Products, 1310 "B" East Edinger
Santa Ana, CA 92705 Phone (714) 558-8813

COMMODORE 64-128

BLIZTEXT WORD PROCESSOR FOR C-64/128
Has all the features you expect from a good word processor plus unique capabilities you won't find on other leading word processors at this price. Built-in data communications to exchange data with other computers or BBS. Comes with 125-page manual, mailmerge, and program to edit BASIC programs — plus a software driver to use BLIZTEXT with any EPSON or PANASONIC parallel Printer.
Order #4966 **$19.95**

Small Business Programs Commodore 64

15 SMALL BUSINESS PROGRAMS FOR THE C-64/128
15 full-blown very useful business programs in BASIC. You get the complete source code on powerful business solutions like MAILING LIST, INVENTORY, INVOICE WRITING, MORTGAGE CALCULATIONS, and much more. Package includes disk and 121-page manual.
Order #4704 **$19.95**

29 SUPER PROGRAMS FOR THE C-64/128
They range from games over a powerful Sprite editor to 3-D plot programs and forecasting of future events. Disk and 128-page manual included.
Order #4705 **$19.95**

SUPER UTILITY PACKAGE FOR C-64/128
Machine language routines for the advanced C-64 user. Disk utilities, device handlers, screen print, A/D converters, custom BASIC commands, and much more. Disk and 148-page manual included.
Order #4989 **$19.95**

MACROFIRE — EDITOR/ASSEMBLER FOR C-64/128
Speed up your C-64! MACROFIRE is one of the most powerful Editor/Assemblers on the market. Package includes disk and documentation.
Order #4963 **$29.95**

MACHINE LANGUAGE INTRODUCTION ON THE C-64/128
Complete introductory course into machine language on the C-64. Disk and 108-page manual with lots of sample programs.
Order #4702 **$14.95**

FIG FORTH FOR C-64
Extended FIG-FORTH version includes editor, graphics package, and sample programs. Disk and documentation.
Order #4960 **$19.95**

EPSON/PANASONIC PRINTER INTERFACE
Use any parallel printer with your C-64. Includes 6 ft. cable, software, and description.
Order #4990 **$19.95**

COMMODORE 64 TUNE-UP
This book contains virtually everything on how to expand your C-64. Interesting user port experiments; 172 pages full of hard-to-get information, schematics, and software.
Order #185 **$12.95**

46 GAMES FOR THE C-64
Great Games in BASIC. Graphics and sound. Disk with 145-page manual.
Order #4988 **$19.95**

OTHER COMMODORE GAMES
Order #4941 GNOME ARCADE **$9.95**
Order #4942 ACID RAIN GAME **$9.95**
Buy all Commodore 64 Products from this ad (order #4999) for only **$149.00** SAVE $68.40

ATARI 800/800XL/130XE

Order #	*Item*	*Price*
169	How to Program your ATARI in Machine Language, 115 pp.	**$9.95**
172	Hackerbook, Tips and Tricks, Machine Lang. Subrout., 116 pp.	**9.95**
170	FORTH on the ATARI, Learning by Using, 118 pp.	**7.95**
171	ASTROLOGY on the ATARI, 38 pp.	**9.95**
162	Games for the ATARI, 114 pp.	**7.95**
164	ATARI BASIC Learning by Using, 70 pp.	**7.95**

All ATARI Books together order #**180** only **$39.95 You save $13.75**

APPLE II & APPLE IIE

Apple Applications

Order #	*Title*	*Price*
680	"The Custom Apple," 190 pages on how to customize and expand your Apple II; schematics, board layouts, and software.	**$14.95**
68	"Apple Applications." Linked lists, AVL trees, hashing, very advanced programs in BASIC: 138 pp.	**7.95**
178	"The Apple in your Hand." Introduction to Machine Language, FORTH on the Apple II, plus Fourier Analysis in BASIC: 220 pp.	**9.95**
36	"BASIC in 60 Minutes." A unique BASIC intro for the beginner. Lots of sample programs; 140 pp.	**7.95**

Order #**179** — All Apple books together **$29.95 You save $10.85**

BITFIRE • div. of Elcomp Publishing Inc. • PO Box 988 • Chino. CA 91708-0988

JUST CIRCLE THE NUMBERS YOU WANT

Commodore: 4966 4704 4705 4989 4963 4702 4960 4990 185 4988 4941 4942 4999

Atari: 169 172 170 171 162 164 180

Apple: 680 68 178 36 179

IBM: 5902 5202 5602 4702 64 5302 688 689 9500 9503 9504 9502 9510 9511 9512 9501 521 9513

☐ Check Enclosed ☐ Bill my ______ VISA ______ Mastercard

Account Number: ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐ Exp. Date ☐☐☐☐

Add $3.50 shipping/handling; Calif. res. add 6% sales tax. MO YR

Signature ______________________________

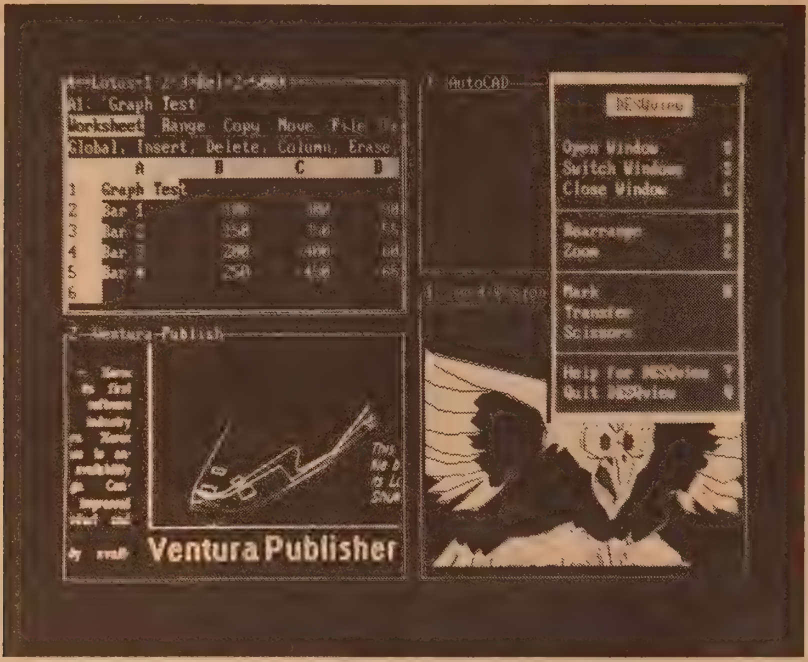
Name ______________________________

Address ______________________________

City ______________ State ______________ Zip ______

Daytime Phone ( ) ______________________________

Elcomp Publishing, Inc. • 4650 Arrow Hwy., Ste. A-3 • Montclair, CA 91763
(714) 626-4070



Woody Liswood: "What I like about DESQview is that it does not force you to a single graphic interface. It allows each program to operate in its own window as the designer of the program intended it to run."

DESQview 2.0:

Multitasking For Those Who Don't Want To Wait

By Woody Liswood

Have you wondered about the hype concerning "windows" and "multitasking"?

Well, not to worry. If you need multitasking today, it is available in the form of *DESQview*.

No, it is not a graphic window interface like the Macintosh environment. No, it does not even try to emulate that environment, although if you want to use a mouse, it does provide automatic support for more than one version.

What it does, though, is allow you to run multiple programs in extended memory, or, if your memory is limited, it will also swap programs out to the disk when you activate other programs, so that you can have the appearance of multitasking, if not the true effect.

First, a definition. By multitasking, I meant that the system can have more than one program running at the same time, each in its own window. That does not mean they are all running simultaneously. Each program receives a sequential look by the processor. You can tailor the allocation of resources to fit your own requirements: I instructed *DESQview* to put 20 clock ticks into the foreground application and only devote three clicks to the background application. That way I can continue to let a program print in the background while I get very little, if any, performance degradation in my foreground application.

What I like about *DESQview* is that it does not force you to a single graphic interface. It allows each program to operate in its own window as the designer of the program intended it to run.

DESQview works best on a 386 machine with megabytes of extended memory. You would then also purchase QEMM.SYS from Quarterdeck — QEMM.SYS turns those megabytes of extra memory into memory which *DESQview* will use to run programs. Using it will allow you to run as many as nine programs simultaneously. And, if you have enough memory, each of those programs could be as large as 605K.

Although I did not try it, if you really want *GEM* and/or *Windows* as an operating environment, but are disgusted at the lack of professional level programs which run in them, you can run both *GEM* and *Windows* as applications within their own *DESQview* window and have the best of all the worlds. Remember, all it takes is memory!

Built into the *DESQview* manager is an automatic cut and past facility, which allows you to grab information from any screen being displayed and transfer it into any other window. It works with just a touch of a few keys. Also included is a DOS window so that you can work with DOS from a "shell" type of environment. While not as nice as the commercial shell programs such as *1DIR*, the DOS environment does allow you to point and shoot using your arrow keys or a cursor to help eliminate typing mistakes. There is also an autodialer which can dial your phone for you by grabbing the number off the screen and dialing any Hayes compatible modem. And, if you like macros, *DESQview* has a learn command which memorizes your keystrokes while you type them.

DESQview Companions

If you are used to the *Sidekick* type of memory resident utilities, you can run *Sidekick* as a *DESQview* window or spend some money to get a set of *DESQview* companions which add these types of features as their own windows.

The *DESQview* companions contain a calculator, a notepad, a calendar and a telecommunications program. The only one I would recommend is the calculator, which works nicely under *DESQview*. The notepad is modeled, as is *Sidekick*, after *WordStar*, but it lacks the sorting capability of *Sidekick*. The telecommunication program was probably adequate a few years ago, but lacks many of the features of any of the shareware programs. If you need telecommunications, I would still recommend *PROCOMM* or *QMODEM*. The daytimer works great and would be a good addition if you need that sort of program.

Installation

Installation is moderately easy. You run an install using the QEMM disk. Then you run an install using the *DESQview* disk. *DESQview*, when started this way, will check your hard disk; any programs you have out there which match the present program conditions in the *DESQview* libraries are automatically installed for you. Otherwise, you will need to go into the *DESQview* add-a-program mode to tell it about any other programs you want to run.

However, with the multitude of things *DESQview* is doing and the even larger variety of methods your programs use to get things done, there will be a lot of trial and error frustration as you get the program initialized to your world view and programmatic philosophy. If you have a high tolerance to ambiguity, this will be a fun time. If not, and you are not a professional bit and byter, don't beat the computer. It didn't do anything, you did.

The manual, while complete, makes sense mostly after you needed it the most. When it gets esoteric and attempts to explain about pages in virtual memory, I blank out. Mercifully, Quarterdeck's help line is very good, returns calls if necessary and was courteous in explaining what, to the support staff, must have been the most basic of questions.

I ran into a problem trying to get *DESQview* started on my Wang IBM based 386 machine with 2.5 MBs of memory. It would only go into an automatic reboot. After a week or so of struggling, I finally swapped the Wang EGA board for my Vega 7 which I use on my no-name clone. Everything worked fine. Turns out the Wang board really is the Paradise Autoswitch. I set the board to permanent EGA mode and *DESQview* worked fine, but it took awhile to figure that one out.

Then, many of the programs I wanted to run told me that I had memory problems when I first installed them. What I did was use the

We Search The World To Bring You

1-Lowest Prices
2-Highest Quality
3-Fastest Service

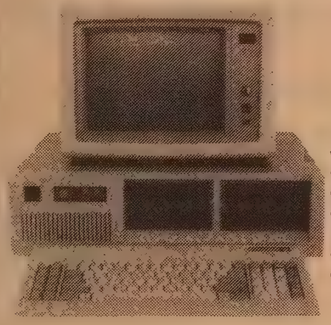
Out of this World SPECIALS

HARD DRIVES

SEAGATE 20 MB w/ controller	$289
SEAGATE 30 MB w/ controller	305
SEAGATE 40 MB . . . ST251	400

PRINTERS

PANASONIC 1091i	$200
CITIZEN MSP-10	260
TOSHIBA	CALL
HP LASER JET	CALL



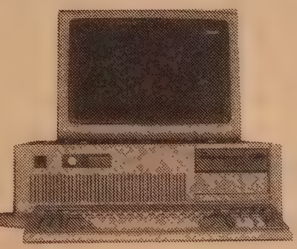
Turbo XT System

- 4.77/10 MHz System Board
- 640K on board
- 8088-2 CPU
- AT Style Case w/ Keylock & Reset
- 150 W Power Supply
- Mono graphic printer card
- TTL Amber or green monitor
- Two (2) 360K Floppy drives w/controller
- AT Style Keyboard
- Assembled & Tested
- One year warranty
- FCC Class B Approved

$579 Complete

AT 286 Base System

- 8/12 MHz System Board
- 512K on board
- PHOENIX BIOS
- AT Standard case
- 200 Watt Power Supply
- 1.2MB Floppy Drive
- FDD/HDD Controller
- Clock/calendar w/battery
- AT Keyboard
- Assembled & Tested
- One year warranty
- FCC Class B Approved



Fully configured Mono System: Basic system as described above, w/mono monitor, Herc. comp. mono graphic card & printer port $1059

AT 386 System-16 MHz . . . . $CALL

$869

Tape Back-Up

Irwin 20MB	$370
Irwin 40MB	410
Archive 60MB Int	545
Archive 60MB Ext	585
Tanberg, Wangtech	Call

CALL

Add-on Cards

Mono Graphic Printer Card	$45
Color Graphic Printer Card	48
EGA Card	125
XT Multi I/O	54
AT I/O (Serial/parallel/game)	54
Floppy controller	22
AT 1.2 MB/360K FD Controller	52
AT W.D. FD/HD Controller	140

Miscellaneous

Mouse w/software	$59
Power Center	30
Fujitsu 360K/1.2M	75/100
Teac 360K/1.2M	84/110
Monitors (Packard Bell, Parco, etc.)	BEST PRICE
Hayes Compatible Modems	
1200 Int	$89
1200 Ext	109
2400 Int	Call
2400 Ext	Call
Power Supplies	
150 W	46
200 W	73
5060 Keyboard	42
Turbo XT Motherboard	85
AT 6/10 Motherboard	330

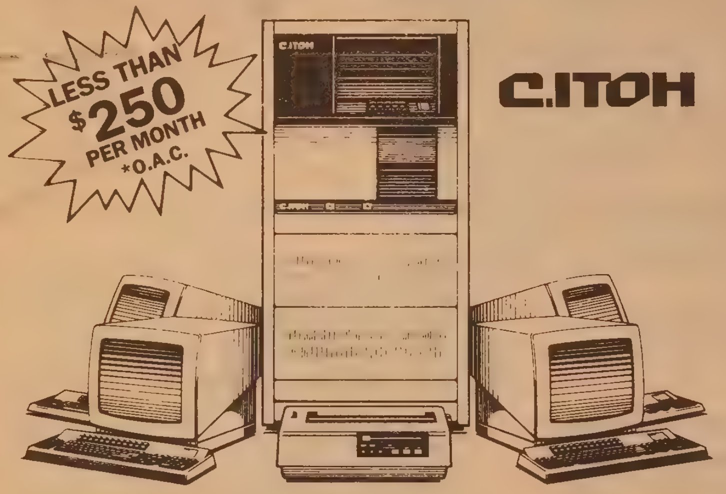
D&D TRANSWORLD, INC.

12781 Western Ave., Suite J, Garden Grove, CA 92641
(714) 893-7725

Call For Dealer & Corp. Discounts

TRUE MULTI-USER SYSTEMS

"There is a Difference"



Not A PC with a LAN Board -

YOU Get:

- C. Itoh CPU-1 MB Memory
- 53 MB Disk Storage
- 500 Kb Floppy
- 2-250 workstations
- Applications software incl. word processing spreadsheet, graphics packages, payroll, A/P, A/R, G/L, O/E, Invoicing
- 8 Serial Ports
- Tape back up available
- Multi user, multi tasking

HARDWARE • SOFTWARE
SERVICE • TRAINING

ACCURATE
COMPUTER
SOLUTIONS

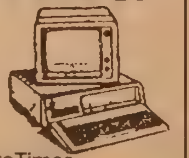
2555 E. Chapman Ave., Suite 450
Fullerton, CA 92631

(714)
870-1155
Ask for Norm Hagelstrom

FREE•FREE•FREE
COMPUTER DRAWING

NO OBLIGATION OR PURCHASE NECESSARY

1st Prize	2nd Prize	3rd Prize
C. ITOH 680/286 2-9 Users MS/DOS 40-70 MB Disk	C. ITOH ProWriter Jr. 160 cps	C. ITOH Terminal CIES-62



To introduce C. ITOH computers and related products to MicroTimes readers, we are offering you this no obligation opportunity. **DRAWING DATE: APRIL 15, 1988.**

Name ______________________

Address ______________________

City ______________ State ________

Zip __________ Phone ______________

Send To:
C. ITOH DRAWING
ACS, Ste. 450
2555 E. Chapman Ave.
Fullerton, CA 92631

change-program mode of *DESQview* to gradually decrease the memory requirements of each of the programs until they all ran.

As of today, on the 386 box, everything I have, runs. This includes programs such as *Lotus*, release 1 and 2, *Procomm, Sidekick, dBASE III, Instaplan, Norton Utilities, WordStar 4.0, Wordstar 2000, Xywrite III, Art Of Negotiating, , VP-Planner, Vfeature,* MicroSoft Mouse Com port, MicroSoft bus mouse, DOS, *DESQview Calc* and many more.

Running Under DESQview

I identified the SYS REQ key on my keyboard as the key to activate *DESQview*. I automatically boot into *DESQview* from the Autoexec.bat file. After opening the program I wish to run, I can call up *DESQview* by pressing the SYS REQ key or both mouse buttons simultaneously. The manager allows me to close the window, or open another window, cut and paste, change windows, modify program specifications to run under *DESQview* and even to change the *DESQview* setup itself.

It took about one minute to get used to the interface. Another minute to get used to the mouse, and that was it.

DESQview also allows you to move and/or change the size, initial location and color usage of any of its nine windows.

When leaving a window, you have the option of allowing it to continue running or to freeze it in the background. Programs like *Lotus* always check the keyboard, so if you are just pushing the program into the background and it does not have a task to do, it is better to freeze it so that it doesn't waste system performance.

DESQview normally assigns a small size screen window to a program when you activate it, unless that program automatically writes to a full size screen. However, if you wish to expand the window to a full size screen, you activate the *DESQview* menu and press Z for Zoom and you get that screen immediately.

To add a program, you enter the *DESQview* menu and select open-a-window, then add-a-program. You give the program a name, tell what keys to use to call it from the menu, what size to reserve for it in memory, where it is located and how to call it up. You can also add any switches you might normally use to the call up procedure. You need to specify if the program writes directly to the screen if it displays graphics information, if it can be swapped out of memory and if it requires a floppy disk to run.

If the program does not write directly to the screen, then it can run in a smaller window.

You would want to specify that your communication program cannot be swapped out of memory, since by doing so it would lose its connection with the modem and the telephone line.

There are a number of other questions to answer on additional set up screens for more advanced usage. The ones you will most likely want to change are whether to return to *DESQview* or to DOS when you exit a program, to allow the program to use its own colors or ones selected by *DESQview*, to tell whether the program uses a math coprocessor or to specify that a program may only run in the foreground.

> **DESQview does not force you to a single graphic interface. It allows each program to operate in its own window as the designer of that program intended it to run.**

The learn and macro features work simply. When you are at the point where you want to record a series of keystrokes, call up *DESQview* using the Shift key along with whatever key you selected to call up *DESQview*. Then you start recording. When done, do the same thing and it stops.

You can use the recordings as macros for your own programs or as macros to give *DESQview* sets of instructions.

I also ran *DESQview* on my no name clone with a 286 card and about one MB of memory. It ran the same way, but since it had no massive memory for QEMM to work with, I was unable to get multitasking. *DESQview* would swap every program I had in the background to disk. It allowed me to have multiple programs all active, but only one running. Also, it used substantially more memory on that machine, and a few of the programs which I use, such as Instaplan, did not have enough memory to load after I had already loaded *DESQview*.

Many people have been waiting for a good multitasking environment for their PC. *DESQview* is a good windowing program for those with a 386 machine and megabytes of memory. It's available now. And it works. (Quarterdeck Office Systems,150 Pico Boulevard, Santa Monica, CA 90405. 213/392-9701.) ☐

Copyright © 1987 by Woody Liswood. All rights reserved.

BRING THIS AD
AND SAVE $2.00
OFF ADMISSION FEE

REGISTER TO WIN AN
IBM COMPUTER SYSTEM!!!

SOUTHLAND COMPUTER FAIRE AND CONFERENCE

The most exciting computer event of the year
COMING TO THE

SANTA MONICA CIVIC AUDITORIUM

1855 Main Street, Santa Monica, CA 90401

For Vendor Information Call (213) 452-0165
For Seminar Information Call (213) 452-7936

November 27th 10 am to 8 pm
28th 10 am to 8 pm
29th 10 am to 5 pm

General Admission $6.00
3 Day Admission $11.00

Discounts to seniors, students, handicapped and children under 12

FEATURING:

- The newest in PC software and hardware.
- Over 30 hours of free seminars on graphics, word processing, spreadsheets, desktop publishing and more.
- Over 40 hours of professional development seminars — hands on training.
- Key note address by Dr. Larry Magid, Computer Columnist — LA Times.
- Special appearances by WordPerfect Corp., Ashton-Tate, Ventura Publisher, Borland Microsoft and more.
- Thousands of professional and beginning users and buyers in attendance.

another exciting event presented by

Promo Com, Inc.
3110 Main Street, Second Floor
Santa Monica, California 90405
(213) 452-0165 or (213) 452-7936

in association with
Computer Trading Post
Seminars Produced by
W. A. Yacco & Associates

CONFERENCE & SEMINAR SCHEDULE

FREE SEMINARS

CONFERENCE HALL 1

FRIDAY, NOV 27th

11:00am 12:00pm 1:00pm 2:00pm 3:00pm 4.00pm

GRAPHICS I	GRAPHICS 2
Using paint programs to create graphics images INCLUDING: ■ PC Paint Brush ■ DR Halo ■ Halo DPE	Creating presentation graphics and their integration into desktop publishing documents INCLUDING: ■ Gem Draw Plus ■ Gem Graph ■ Gem Word Chart ■ Gem Desktop Publishing

SATURDAY, NOV 28th

11:00am 12:00pm 1:00pm 2:00pm 3:00pm 4:00pm

SPREADSHEETS		
dBASE III Plus The number one full-powered database product	Lotus 1-2-3 Introduction to the most popular and widely used spread sheet applications	Microsoft ■ Excel for the PC

SUNDAY, NOV 29th

11:00am 12:00pm 1:00pm 2:00pm 3:00pm 4:00pm

BORLAND				
Paradox The major database and new member of the family	Reflex Database and data analyst	Turbo BASIC Borland's hot version of the standard	Turbo C An affordable and full-featured version of C	Reserved for a New Announcement

CONFERENCE HALL 2

FRIDAY, NOV 27th

11:00am 12:30pm 1:30pm 2:30pm 4:00pm

WORD PROCESSING			
	Microsoft		
WordPerfect Corp. INCLUDING ■ WordPerfect ■ PlanPerfect ■ Library ■ Executive	Windows 386 The interim solution for '386 micros	Works for the PC Hot new integrated package	Word 4.0 Faster and more powerful than ever

SATURDAY, NOV 28th

11:00am 12:30pm 1:30pm 2:30pm 4.00pm

DESKTOP PUBLISHING SOFTWARE		
Xerox Ventura Publisher Edition Full featured desktop publishing for the PC	Aldus PageMaker The original DTP. Now for the IBM PC	Ashton-Tate • Byline

SUNDAY, NOV 29th

11:00am 12:30pm 1:30pm 2:30pm 4:00pm

DESKTOP PUBLISHING HARDWARE			
How to configure a major DTP System INCLUDING ■ The AST Desktop Publishing System	How to use a multisync monitor for hi-resolution DTP applications INCLUDING ■ CTX	Using scanners to input text and graphics into DTP applications	Laser Printers How to combine fonts, images and other graphics components using a laser printer to produce DTP documents

For further information call (213) 452-7936

This schedule is subject to change.

PROFESSIONAL DEVELOPMENT SEMINARS

Pre-registration required to assure placement

$ 65.00 — one seminar
$ 85.00 — at the door
$ 55.00 — each additional seminar
$275.00 — any 6 seminars

	CONFERENCE HALL 3		CONFERENCE HALL 4	
	10:00am 2:00pm	2:30pm 6:30pm	10:00am 2:00pm	2:30pm 6:30pm
FRIDAY NOV 27th	How to Build Your Own AT	Maintaining the PC	Introduction to the IBM PC (DOS)	Advanced PC (Hard Disks)
SATURDAY NOV 28th	Advanced Word	Xerox Ventura Publisher	Advanced WordPerfect	Pagemaker
SUNDAY NOV 29th	Advanced Lotus 1-2-3	dBASE Programming	Introduction to the PC (DOS)	Advanced PC (Hard Disks)

10:00 - 10:45am — Keynote Speaker
Dr. Larry Magid, LA Times Computer Columnist will speak on the products introduced at Comdex and trends and new products to look for in 1988.
10:15 each day in Conference Hall 1

- For the Beginner — Consumer Support
  - What to look for
  - What questions to ask
  - Need evaluation
- Independent consultants available throughout the show for individualized support.

PLUS. Door prizes each hour throughout the show.

Private and Group Training available on most software packages **anytime.**

12 Yrs. In Orange County

"USER FRIENDLY DEALER"

Concord Computer Products

*Division of Concord Electronics

714-632-6790 • 800-435-0907

We Don't Cut Corners

AT Turbo Bare Bones System

- 6/10 MHz Motherboard w/BIOS
- Assembled in case
- 200 Watt Power Supply
- Fully tested & burned in
- Complete the system yourself.

$610 w/ 512K

$660 w/ 1 MB

Low Cost AT Turbo 10 MHz

- 512K Memory
- 6/10 MHz
- Battery/clock/calendar
- One Floppy Drive
- 20 MB ST 225 Hard Drive
- Western Digital Controller
- 200 W Power Supply
- Herc. compatible graphics card
- Hi-res. TTL Monitor
- Parallel/printer port
- Keyboard
- Deluxe cabinet
- Free Training
- 1 Year Limited Warranty

FREE SOFTWARE & DISKETTES w/ purchase

$1250 w/ 512K

$1295 w/ 1 MB

XT Compatible System

- 640K on Mainboard
- 4.77 MHz
- 8 expansion slots
- Dual floppy drives w/ controller
- Herc. comp. graphics card
- 150 Watt Power Supply
- Hi-res monitor
- AT Style Keyboard
- Slide case w/ shielding
- 1 Year Limited Warranty

$595

FREE SOFTWARE & DISKETTES w/ purchase

XT Turbo System

- 640K on Mainboard
- 4.77/8 MHz
- 8 Expansion Slots
- Dual Floppy Drives w/ controller
- Hercules Compatible Graphics Card
- 150 Watt Power Supply
- Hi-Res Amber Monitor
- AT Style Keyboard
- Slide case w/ shielding
- 1 Year Limited Warranty
- AT Style Case w/ front reset & turbo button, lock

$625

FREE SOFTWARE & DISKETTES w/ purchase

2910-B E. La Palma Ave.
Anaheim, CA 92806

(714) 632-6790

Terms: Mastercard, Visa, C.O.D. Prices subject to change without notice.

HOLIDAY SPECIALS

Prices good until December 25, 1987. Supplies are limited, so

ORDER NOW!!

We Offer Quality & Reliability

PARADISE EGA

Autoswitch
Card

$155

MITSUBA

"A Name To Remember"

MODEM

300/1200 Baud
Internal

$85

SANYO MONITOR

Monochrome
Amber TTL

$85

Printers

Epson LX800	$210
Epson LQ800	485
Epson FX 286e	460
Okidata 182	245

Includes Cable

Modems

Mitsuba 300/2400	$189
Mitak 300/2400 External	210

Software

Framework II	$280
Multimate	195
Wordstar Professional	180
Bankstreet Writer +	63
Norton Utilities	57
Rapidfile	160
WordPerfect (Limited Copies)	210

Mice

MICROSOFT MOUSE w/ software	$110
MOUSE SYSTEMS OPTOMOUSE	110

The following items are in stock. Come in and browse.

- Parallel/Serial Cables
- Monitor Cables
- Power Supplies
- Power Cords
- Gender Changers
- Cable connectors & hoods
- Monitors
- V20 Chips
- XT & AT Boards
- Memory Cards
- Keyboards
- Printer & Monitor stands
- Toolkits
- Switchboxes
- Floppy & Hard Drives
- Eproms
- RAM chips
- Support Boards

FREE

PC WRITE

Just for stopping into our store.
No purchase necessary.
Limit one per customer.

(714) 632-6790

Telephones And The PC Connection

By Ed Kahn

As Macintosh software poured out and the spiffy new Macs hit the market, I began to feel left out. For all its speed and memory, I was feeling bored with my souped up AT-class IBM compatible powerhouse of yestermonth. Who needs another word processor, spreadsheet, or database? The new products are not revolutionary. They are merely elaborations and refinements.

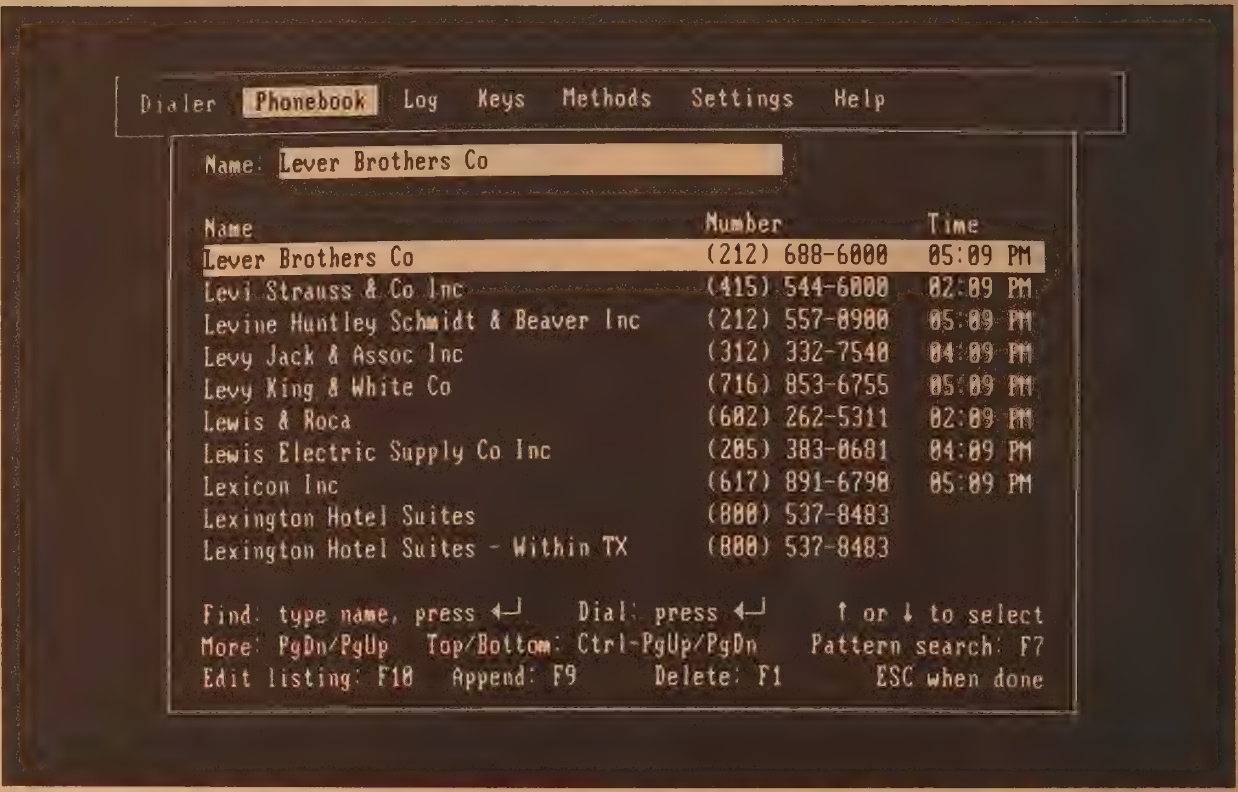
Just when I was about to give up, however, three new products marrying the PC and the telephone came to market. These products, *Hot Line*, *BigmOuth* and *Freeway*, change the way you use your phone when glued to the computer.

Hot Line

The first program is so amazingly simple in concept it is a wonder that nobody developed it before. It is a super-deluxe memory-resident telephone dialer which dials through your modem. *Hot Line* ($39.95) is so straightforward you can pretty much run it with no documentation whatsoever. The literature included in the package, in fact, is a small foldout that looks more like a brochure than documentation. It guides you through the simple installation and directs you to use the built-in help menus.

Once installed, the program does everything you could want — almost. The entire program is accessed through the <Alt> key pressed at the same time as one of the ten function keys on the PC keyboard. <Alt> F1 brings up an alphabetical listing of some 2,000 of the largest corporations in the United States. To find the company you want, simply type its name in the box at the top of the screen and hit return. The directory then moves to the listing which shows you the company name, the phone number, including area code, and the current time in that location. Hitting return again dials the number. Pick up the phone. When it's answered, hit the space bar. Should you need to redial, hit <Alt> F7.

Another pre-configured key combination allows you to find the area code for almost any city in the country. After the listing comes, a touch of the return key will connect you to directory assistance in that area code. Another combination of keys puts you into an instant dial mode. You can program up to three sets of ten numbers each to automatically dial your most frequently called numbers. Hit the appropriate function key and the number is automatically dialed.


```
 Dialer  Phonebook  Log  Keys  Methods  Settings  Help

   Name  Lever Brothers Co

   Name                                       Number          Time
   Lever Brothers Co                          (212) 688-6000  05:09 PM
   Levi Strauss & Co Inc                      (415) 544-6000  02:09 PM
   Levine Huntley Schmidt & Beaver Inc        (212) 557-0900  05:09 PM
   Levy Jack & Assoc Inc                      (312) 332-7540  04:09 PM
   Levy King & White Co                       (716) 853-6755  05:09 PM
   Lewis & Roca                               (602) 262-5311  02:09 PM
   Lewis Electric Supply Co Inc               (205) 383-0681  04:09 PM
   Lexicon Inc                                (617) 891-6790  05:09 PM
   Lexington Hotel Suites                     (800) 537-8483
   Lexington Hotel Suites - Within TX         (800) 537-8483

   Find: type name, press ↵     Dial: press ↵       ↑ or ↓ to select
   More: PgDn/PgUp   Top/Bottom: Ctrl-PgUp/PgDn   Pattern search: F7
   Edit listing: F10   Append: F9      Delete: F1       ESC when done
```

Among Hot Line's many features is an alphabetical listing of thousands of the United States' largest corporations. It shows not only the company name but its phone number and the current time in that location.

One nifty feature allows you to automatically dial any number that appears on your screen — even from another program. So, for instance, if you have a document on screen that lists a number you wish to dial, just hit <Alt> F9.

The list of features go on and on. The real heart of the program, however, is the personal directory which can hold up to 65,000 entries, limited only by disk space. You can either create the listing from scratch with any word processor or convert from a database which you already have. *Hot Line* contains code to allow you to import files from *dBASE* as well as other popular formats. Installation includes telling the system your area code, as well as which prefixes within your area code are local calls. Thus, *Hot Line* knows whether a call is local, toll, or long distance.

Pressing <Alt> F6 allows you to enter a phone number to be dialed directly from the numeric keypad, without switching the NumLock key to on. This is a real convenience and reflects the generally thorough care with which the product was designed. To cap things off, the program will make a log of all of your outgoing calls if you like.

Despite the overall quality of the package, there are a few shortcomings. The most glaring weakness shows up in adding a new entry to your personal listing, where the procedure is not as simple as it should be. The procedure calls for adding the listing with a word processor and then recompiling the list for *Hot Line*. This is not difficult, but it is cumbersome. I find that I usually wait until I have several new entries before recompiling. Even though this procedure is not as simple as one would hope, even the most inexperienced novice can easily add names to the personal directory, as the procedure for compiling consists of nothing more than hitting a few keys listed in the *Hot Line* menu.

A second shortcoming will affect only those people whose local calling area includes portions of two area codes. In sections of Los Angeles, for example, local calls embrace prefixes

Hot Line is so amazingly simple in concept it's a wonder nobody developed it before — a super-deluxe memory-resident telephone dialer which dials through your modem.

WESTERN DIGITAL and **Xenon USA** present

FREE

Network Training for Dealers

Learn the works about networks. Its easy with personal seminars by **Xenon USA** and ***WESTERN DIGITAL.*** You will learn how to evaluate your customer's requirements; how to write a specification and proposal for presentation;how to close the sale and how to install the hardware *and* software. It's free, it's easy, and it's ready now!

If you or your staff don't have the time to attend these seminars, we have a bonus offer that you will find hard (if not impossible) to refuse:

Xenon/*WESTERN DIGITAL* Bonus #1: We will evaluate and survey your customer's needs for you. .... Your cost: FREE! Suggested retail: $50.00

Xenon/*WESTERN DIGITAL* Bonus #2: We will write the specification for presentation to your customer for you. .....Your cost: FREE! Suggested retail: $50.00

Xenon/*WESTERN DIGITAL* Bonus #3: We will make the complete hardware and software installation. ....Your cost: $ 25.50/hr. Suggested retail: $50.00/hr.

Xenon/*WESTERN DIGITAL* Bonus #4: ***WESTERN DIGITAL*** StarCard® with cable. ....Your cost: $148.00 Suggested retail: $249.00

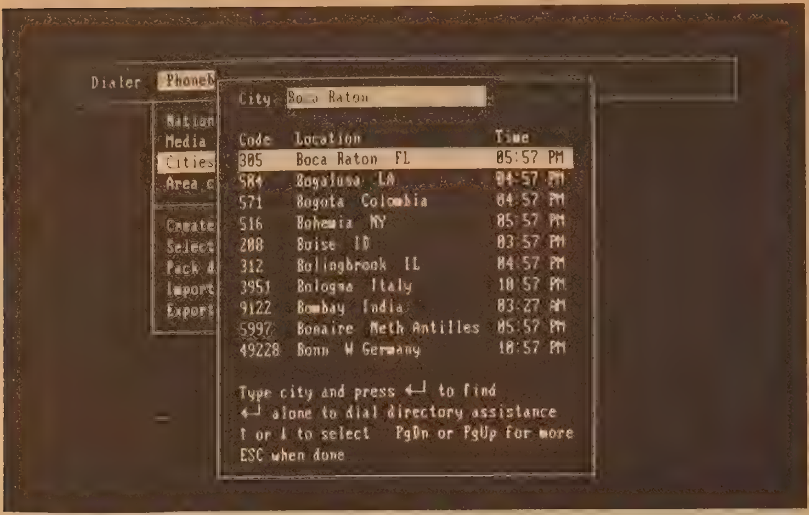
To qualify for this unique program, simply call Jim, Glendy, Dave, Tom or Ray at (714) 250-4438 In Stock Now! **Xenon USA** stocks the entire ***WESTERN DIGITAL*** line of network hardware and software products:

• StarCard®• EtherCard Plus®• StarLink®• Novell Netware®•
• StarCard Plus®• ViaNet®• StarHub®•

Let Us Take the *Overwork* Out Of *Network* Sales, Service and Installation For You.

Xenon USA, Inc. • 17795-F Skypark Blvd. • Irvine, California 92714 • (714) 250-4438 • FAX (714) 250-4513

wdxenon 987-1



```
City: Boca Raton

Code   Location                Time
305    Boca Raton  FL          05:57 PM
504    Bogalusa  LA            04:57 PM
571    Bogota  Colombia        04:57 PM
516    Bohemia  NY             05:57 PM
208    Boise  ID               03:57 PM
312    Bolingbrook  IL         04:57 PM
3951   Bologna  Italy          10:57 PM
9122   Bombay  India           03:27 AM
5997   Bonaire  Neth Antilles  05:57 PM
49228  Bonn  W Germany         10:57 PM

Type city and press ↵ to find
↵ alone to dial directory assistance
↑ or ↓ to select   PgDn or PgUp for more
ESC when done
```

One of Hot Line's directories consists of a list of area codes for more than 3,000 cities around the world. Hot Line will also automatically call directory assistance in that area for you.

in both areas 213 and 818. *Hot Line* does not know how to handle this and treats one or the other prefix as a toll call. While this does not make dialing any more difficult, the log will list these calls as toll calls.

A final criticism is about an actual bug. The log lists the telephone number, its location, and the party called if it is a listing from one of the *Hot Line* directories. But if you use <Alt> F6 and enter a number to call, the log listing will only show a phone number and the location, based on the area code. I wanted to edit this ASCII file to include the name of the party called. When I had finished, I found that subsequent calls were not logged into the file. General Information, the publisher of this excellent program, tells me that all of these problems are being corrected in a new and vastly improved version, to be released around the time you read this article.

BigmOuth and The Complete Answering Machine

Not long after learning about *Hot Line*, I heard of two other telephone-related products. Both are very sophisticated telephone answering machines that run circles around any stand-alone machine you can buy. While both *BigmOuth* ($239.00) and *The Complete Answering Machine* ($350.00) offer many of the same features, your choice will depend on just what you want to do. A major difference is that *The Complete Answering Machine (CAM)* is memory resident. Thus, you can be working in an application and *CAM* will still answer and handle any calls that come in. Whether this is an advantage or not depends upon your use and personal style. For myself, I always answer the phone when I hear it ring, so the memory resident feature is actually a disadvantage for me. I would prefer to activate the program when I leave and turn it off when I return home.

CAM is easy enough to activate by typing "answer," but to turn it off, I have to do a warm boot, which is more time-consuming than pressing an exit key to deactivate *BigmOuth*.

Both programs include a board as well as software. *CAM*, however, uses considerably more disk space than *BigmOuth*. Both systems work by plugging a phone line and a telephone into the jacks on the back of the board. A modem is not used. Both systems can answer with a greeting in your own voice.

If you are dedicating a whole computer to managing the phone, you may prefer some of the features of *CAM*. One of the nice touches is that you can ask for the last eight seconds of a message to be replayed. The theory is that this will include the phone number portion of the message. Also, *CAM* has more professional-looking documentation that is a bit easier to understand. In addition, the package includes a template for your telephone and a quick summary card to carry in your wallet or purse. The system has a unique feature which allows callers to review and edit the messages they leave. I find this feature to be confusing for the general public, but potentially useful for a phone system that serves a limited number of callers who know the capabilities of the system.

BigmOuth also has a number of features that set it apart from the competition. One particularly useful option allows you to set a toggle so that you can use your own phone to simulate an incoming call. In this mode, when you pick up the phone, *BigmOuth* will answer so that you can test the system and do everything that you could do as a remote caller. If you have only one phone line, this saves a lot of inconvenience when initially setting up the machine.

While both systems will allow the use of an external speaker, *BigmOuth* provides one. *BigmOuth* also has a number of other unique features that give it added power. It allows you to incorporate a database of phone numbers into the system. You can then use this list for speed dialing in a fashion similar to *Hot Line*. While *BigmOuth* has a few more capabilities than *Hotline* in this regard, it lacks the convenience *Hot Line*'s memory resident status provides.

A unique feature of *BigmOuth* is its ability to automatically redial a number up to 15 times if the line is busy. Another feature that may be useful is the ability to record and play back voice messages from the DOS prompt. Thus, you can construct batch files that will speak instructions as part of the program. For the more adventurous, it is possible to create programs that incorporate spoken messages from the files that have been recorded with this feature.

A final perk worth mentioning is *BigmOuth*'s ability to be tied into an alarm system. In the event that an alarm is triggered, the system will make a series of calls according to your instructions.

Both *BigmOuth* and *CAM* have a wide range of features in common. You can set the systems up to accommodate a large number of mailboxes so that every person who may get messages has his or her own mailbox. Personalized messages, in the voice of the boxholder, will answer the individual boxes. You can also arrange for frequent callers to have boxes where they can pick up messages from you.

Both systems also allow you to automatically make calls at times you determine to a list of numbers. They let you know if the calls have been received and can require a voice response which you listen to later. I found this feature useful when late for an appointment. I tried to call the person I was to meet and, when there was no answer, I instructed my computer to call with my recorded message every few minutes until there was an answer.

Another feature that runs circles around any simple answering machine is the ability to know when calls come in. Both systems will give you this information, even when you call in from another phone for your messages. And finally, the system will call you at a different number immediately after a message comes in. Thus, you can leave a message for the caller saying that their message will be forwarded to you as soon as they hang up and that you will call back within a few minutes.

All in all, either of these systems will spoil you. Every feature I had on my list for a telephone answering machine is included, plus other features I never dreamed of.

Freeway

The last phone-related item is a new communications program that is the simplest, most straightforward package I have tried. *Freeway Advanced* ($89.00) is built around a series of menus. The opening menu allows you to configure the system and enter the particulars of up to 100 telephone numbers that your computer regularly accesses.

After you have initially entered the parameters for the different listings, making a connection is as simple as pressing the enter key. If you want to automate the log on procedures, press the autoteach key from the main menu, and all of the keyboard entries plus the responses from the remote system will be logged until you press autopilot cancel. After this, when you choose that phone list, the autopilot will automatically deliver control back to you after all of the logon procedures have been completed.

Although all communications programs do essentially the same thing, it seems easier on *Freeway*. The program is filled with options that make using a modem easy. You can, for instance, name a different log file for each listing you enter in *Freeway*'s phone book. This will automatically save the whole session, which you can later edit or delete. I also found that the program worked perfectly in transferring material between two computers connected simply by cables. I just chose the listing and hit return. On the second computer, I simply uploaded a file. The results were automatically saved on the log file I had created upon installation of *Freeway*.

The documentation is designed for someone who wants to get started without wading through piles of technical information. This doesn't mean, however, that this is a simple program that leaves out the options you find in more complex programs. The tutorial begins by walking you through initial setup; it then takes you through a sample session. Kortek, *Freeway*'s publisher, incorporates its own BBS into the tutorial; the sample session is a real session which costs you nothing except the telephone charges. The third tutorial has you set up autopilot for the Kortek bulletin board. The rest of the documentation introduces you to other features of the software, but against a background of your knowledge of how to use the basics.

The features include an emulation of *Crosstalk*'s command language, instructions on how to write a script using *Freeway*'s commands, and a timer that will allow you to automatically have your system perform the functions you indicate in a script at a time you set. If you've been thinking about getting in touch with the remote bulletin boards that are listed in each issue of *MicroTimes*, *Freeway* is a good software package to get you started.

Resources:

BigmOuth. $239. Talking Technology, Inc. 6558 Lucas Avenue, Suite 301 Oakland, CA 94611 (415) 339-TALK.

The Complete Answering Machine. $350. The Complete PC, Inc. 521 Cottonwood Drive, Milpitas, CA 95035, (408) 434-0145.

Freeway Advanced. $89.00. Kortek Inc. 505 Hamilton Avenue, Palo Alto, CA 94301 (800)327-0310.

Hot Line. $39.95. General Information Inc., 401 Park Place, Suite 305, Kirkland, WA 98033. ☐

Copyright © 1987 by Ed Kahn. All rights reserved.

WHOLESALE TO THE PUBLIC . . .

GDC COMPUTERS

OUR 5TH YEAR

WHO IS GDC? GDC opened for business in the spring of 1983, and has grown every year since. To celebrate the opening of our Huntington Beach warehouse & showroom, we are offering our wholesale prices to the public for the first time. Our business is built on our reputation for reliability of products & competitive pricing. English speaking technicians on duty all the time. Some of our customers include: USC, UCLA, KAWASAKI, UCI, MCDONNELL DOUGLAS, and many others. We look forward to providing you with the same quality service we provide all our dealers, customers and friends.

COMPARE Their Bare Bones Systems to our COMPLETE SYSTEMS

OUR COMPLETE SYSTEMS

are assembled, diagnostically tested and burned in for 72 hours. All GDC computers come complete with a ONE YEAR PARTS & LABOR WRITTEN CONTRACTUAL WARRANTY.

CITIZEN PRINTERS

MSP-10	.269
MSP-15E	NEW 329
MSP-40	NEW 299
MSP-45	NEW 429
MSP-50	NEW 399
MSP-55	NEW 479
(300cps Color)	
TRIBUTE 124 (24 pin)	.445
TRIBUTE 224 (24 pin)	.599
PREMIERE 35 (LQ)	.445
OVERTURE 110 Laser	.1399

XT TURBO
MONO: $569
COLOR: $729
EGA: $979

- Monitor
- Case
- 150 W Power supply
- 4.77/8 MHz Turbo motherboard
- 640K on board (120 ns)
- (2) 360K Floppy drives
- Parallel/Serial/Game ports
- Clock/Calendar
- Floppy disk controller
- Video graphics card
- AT Keyboard

PORTABLE XT TURBO
$899

- Monitor (Amber)
- Case
- 150 W Power Supply
- 4.77/8 MHz TURBO Motherboard
- 640K (120 ns)
- Parallel/Serial/Game ports
- Monographic card
- AT Style keyboard
- (2) Floppy drives (360K)

AT TURBO
MONO: $1199
COLOR: $1359
EGA: $1529

- Monitor
- AT Case
- 200 W Power Supply
- 6/10 MHz Motherboard
- 1 MB on board (120 ns)
- 360K Floppy drive
- 1.2 MEG Drive
- Serial/Parallel/Game Port
- Video graphics card
- AT Keyboard

MONITORS

RGB's (Amber/green switch.)	
CTX-1410 (640x200)	.235
CTX-1411 (640x240)	.275
EGA'S	
CTX-1422	.345
NEC Multisync	.535
EGA Autoswitch Card	.139
Samsung TTL Hi-Res	.75

HARD/FLOPPY DISKS

TEAC 360K	.89
TEAC 1.2 MB	.119
CITIZEN 720K, 3.5"	.115
FUJITSU 360K	.75
SEAGATE ST225 20MB w/WD contrl	.325
SEAGATE ST238 30MB w/WD contrl	.355
SEAGATE ST251 40MB	.449

MONTHLY SPECIAL

* * * *NEW* * * *

CITIZEN 180D PRINTER

180 CHARACTERS PER SECOND

TRACTOR OR SINGLE SHEET FEED INCLUDED

$175

CITIZEN 120D $149

GDC COMPUTERS

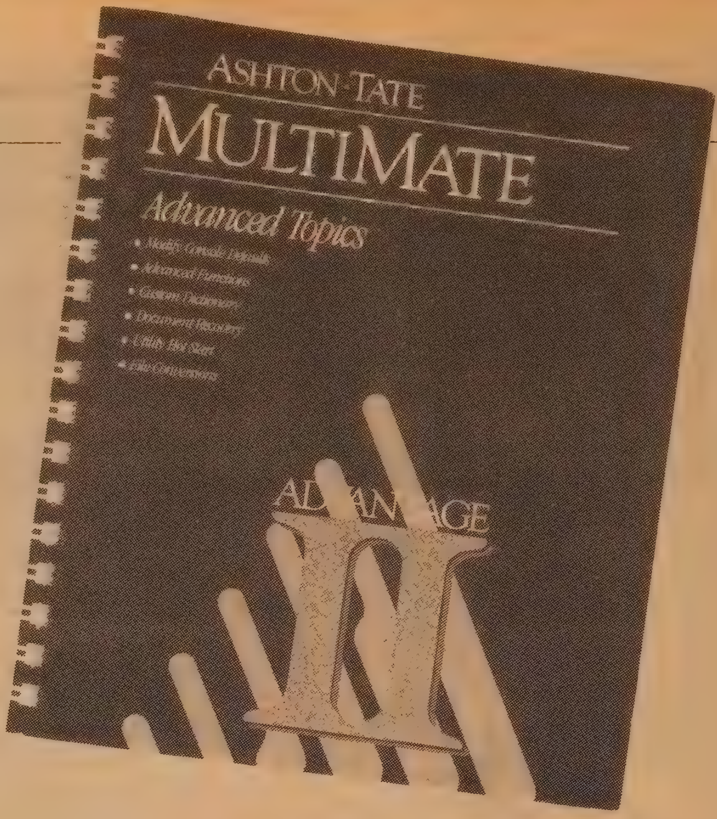
7712 "C" TALBERT AVE.
HUNTINGTON BEACH, CA 92647
714-842-9252 or 714-842-3198

Shipping/handling: add UPS charges. Prices reflect a 3% cash discount.

master charge VISA

MultiMate Advantage II

A MultiMate User Looks At The New Version Of An Old Favorite



By Robert Beauchamp

MultiMate is one of the oldest and most popular office word processors. And if there is one rule a person responsible for purchasing an office word processor should remember, it is this: don't get between people who do word processing and their favorite software package. It can be tempting, sure. Just walk into a software store and see the latest technology with all the snazzy features. Your head spins around and your eyes bulge as you goggle at that new program. Fantasies of increased productivity flash in your head.

It's enticing and seductive in one of those places. But remember, you have a family at home. A family of employees who have spent a lot of time, effort and frustration learning the *last* massive word processor you bought. And chances are that for all the deficiencies that application may have, they love it as their own.

This kind of dedication to a single program was evidenced at the Ashton-Tate/*MultiMate* seminar during the latest Egghead Software show in Santa Clara. The faithful were gathered in a back room to learn about the newest incarnation of their program.

Amid a flurry of free jerseys, pens and coffee mugs Ashton-Tate was getting the word across that the old *MultiMate* had been updated to include all the hot new features found in the latest and greatest word processors. But the best news for users was that if you already knew *MultiMate*, you didn't have to change any of your old habits. All the old keystroke commands remained the same — a big hit with the crowd to be sure.

The best news for the office manager is that an update to the new version, dubbed *MultiMate Advantage II*, from any version of *MultiMate*, no matter how old, only costs $100. And even better news is that volume discounts are available.

So if your office already uses *MultiMate* in some form or another, you should consider the update offer from Ashton-Tate. Not only will you get a brand new package just like you would find in the software store, but you'll also keep your employees from grumbling for the next two years.

What's New

Most of the new changes in *MultiMate* were motivated by suggestions from loyal users. Hence they solve many of the problems that users had with the old program. Ashton-Tate also learned a lesson from the Macintosh world: *MultiMate* now includes pull down menus.

MultiMate has always been a professional word processor. It was designed for office use and still performs office tasks such as business letters, form letters and mail merge best of all. If it found its way into homes, it was most likely used by those same people who used it in the workplace.

In our own experience, the original *MultiMate* took days to learn and weeks more to get a real working grasp of the program. Years later, features would finally be discovered and utilized. You simply had to have the time only a professional could devote to learning to work the thing.

MultiMate Advantage II has made an attempt to cut down on the learning curve by combining menus and a "building block" approach to its documentation. Upon sitting down the first time and using a few simple commands, a person can create a document and print it. *MultiMate* then teaches the user such functions as footnoting, cutting and pasting text, and how to make mailing labels.

For the more advanced user, the gamut of features runs from spell checking a document with the 110,000 word dictionary to importing and converting ASCII and *dBASE* files.

The main difference, however, from the old *MultiMate* is that all you have to do to learn these features is run through the menus and follow the instructions provided on the screen. Where once users had to dig through mounds of documentation and memorize keystroke combinations, now all they have to do is push a few buttons and fill in a file name here or there. You can easily learn and experiment with the vast majority of *Advantage II*'s features.

Another advantage to pull down menus is that a user is more likely to employ these advanced functions in everyday practice, since they are so easy to access. The menus are also convenient in that they do not require a mouse; thus there is no added hardware expense, and speedy hands used to keying everything remain on the keyboard.

Advantage II also provides such aids as a keyboard template, adhesive labels that can be peeled off and placed directly on the keys, and a quick reference card that lists all the commands and their corresponding keystrokes.

One regret is that the keystroke commands do not appear next to the commands on the pull down menu as they do on the Macintosh. This would have gone a long way toward teaching users the faster and more efficient keystroke combinations.

System Requirements And Installation

In order to get acceptable performance from this program, however, you really must have a hard disk drive. (We used *MultiMate Advantage II* on a Club AT 286 with a 20MB hard disk. The Club AT, while not 100% IBM compatible, had no difficulty supporting the program.) *MultiMate Advantage II* comes with a whopping *eleven* 5-1/4" floppy disks. The 3-1/2" disks for IBM's PS/2 model computers cuts this number down to six, but the thought of all that disk swapping makes the mind reel. It is also necessary to have 384K of free RAM in order to use *Advantage II*. When they say professional, they mean it.

Installation is straightforward and should go well for anyone acquainted with DOS functions. The documentation describes the procedure step by step and doesn't leave out a single keystroke. Just follow the instructions and you'll be able to get this beast into its cage.

Once on the hard disk the lion turns into a lamb. *MultiMate* offers three main levels of menus. The first offers you a choice between the actual word processor and the advanced utilities menus. The word processor menu offers you the choices of editing, creating and printing documents. Inside the actual document editor most commands are on menus as well. You soon find yourself breezing through the menus from cutting and pasting text, to copying files, to converting files to ASCII, to accessing DOS commands — even to accessing other programs while in *MultiMate*.

Improvements

One of the major complaints about the old *MultiMate* was that it was a page-oriented rather than a document-oriented system. This meant that when you were scrolling you could not see both the bottom of one page and the top of another at the same time. There was also a pause when the user went from one page to the next. This could get frustrating when you were trying to correct a line of text that carried over from one page to another.

In keeping with the rest of *Advantage II*, users can still use a page-oriented system if they want to. However, it now offers a form of document orientation as well. This allows fast and easy scrolling in larger documents.

Another aspect of *MultiMate* that some people were annoyed with was the presence of all kinds of symbols

—ALL SYSTEMS COMPLETE—

NO HIDDEN COSTS!

An Open Letter from
Robert Lee, President
Binary Computer Corporation

We sell our service, and let our systems sell themselves!

It is not unusual for us to suggest to our customers that they should not upgrade their system when we see no need to waste their money. We explain to them how we can offer a 30 MB hard disk at the same price as a 20 MB, but we will not do so for the consideration of reliability. We'll work with you to make sure all of our products are the right configuration for your applications. More and more, concerns in the new personal system series create hesitation and mystery. We demonstrate to our customers how BCC systems will fit into the new OS-2 era.

Our warranty and quality are backed by our knowledge and integrity — not just a promise.

AT COMPATIBLE SYSTEM

- 6/10 MHz 80286 CPU
- 1 MB RAM on Board (120ns)
- **Phoenix BIOS**
- 200 Watt Power Supply
- Serial/Parallel/Game Port
- 1.2MB Floppy Drive
- 360K Floppy Drive
- Mono/Graphic/Printer Port
- Monochrome Monitor w/Swivel Base
- **20 MB Seagate Hard Drive**
- **AT Enhanced Keyboard**

$1400

AT COMPATIBLE EGA SYSTEM

- 6/10 MHz 80286 CPU
- 1 MB RAM on Board (120ns)
- **Phoenix BIOS**
- 200 Watt Power Supply
- Serial/Parallel/Game Port
- 1.2MB Floppy Drive
- 360K Floppy Drive
- **EGA Wonder Card**
- **EGA Monitor** (640x350/132 Column Text)
- **20 MB Seagate Hard Drive**
- **AT Enhanced Keyboard**

$1850

XT COMPATIBLE SYSTEM

- 8088-2 XT-Turbo (4.77/8 MHz)
- 640K RAM (120ns) on Board
- Multi I/O (6 Functions)
- Two (2) 360K Floppy Drives
- Monochrome Monitor
- XT/AT Keyboard
- 150W Power Supply

$580

- Add $180 for Color System
- Add $310 for Enhanced Color System
- Add $310 for 20MB Hard Disk

BCC BINARY COMPUTER CORPORATION
15179 Springdale, Huntington Beach, CA 92649

(714) 894-6827

AT and XT are registered trademarks of International Business Machines.

SATURDAY, NOVEMBER 14

COMPUTER BARGAIN SHOW

SAN FERNANDO VALLEY

Computer Swap

EVERY ITEM ON DISPLAY IS AVAILABLE FOR IMMEDIATE PURCHASE AT BARGAIN PRICES

CSUN North Campus

Formerly Devonshire Downs

(On Devonshire between Lindley & Zelzah)

Admission $5 Children Under 12 FREE Sat. 10 a.m. - 5 p.m. For Info. Call in CA 800-433-7469

A MICROSHOWS PRODUCTION

DEALERS AND CORPORATION ACCOUNTS WELCOME!

ARC 3861 SYSTEM

- 80386-16 CPU
- 6/16 MHz switchable
- 512K RAM on board
- 200W UL power supply
- One 1.2 Teac floppy drive
- FDD/HDD controller
- keylock, power and hard disk LED
- real-time clock calendar
- one-year warranty - parts and labor

$1895

TECHNOLAND TURBO 286

- 80286-10 CPU
- 6/10 MHz switchable
- 640K RAM on board
- 200W UL power supply
- AT style keyboard
- one 1.2 Teac floppy drive
- FDD/HDD controller
- keylock, power and turbo LED
- real-time clock and calendar
- one year warranty - parts and labor

$889

Quality, Reliability, Technology, Knowledgeable Technical Support

Volume Discounts Available

MICTRO

Computer Warehouse
(213) 724-0643 - dealers
(213) 724-1684 - technical support
5830 E. Washington Blvd.
City of Commerce, CA 90040

MultiMate Advantage II is truly a professional word processor. Now, however, you don't need to be a professional word processor to get the most out of it.

and signs on the screen indicating indents, tabs, centering and returns. This often led to a cluttered screen that was certainly not WYSIWYG. *Advantage II* offers a preview function that strips away all these symbols and lets the user see how the page will look when printed.

Advantage II offers a number of other impressive features as well. One of our favorites is the alternate keyboard function. This option allows you to choose from five keyboards that create letters for Romance languages, Germanic languages, math symbols and graphic symbols such as paragraph signs and, for the lawyers, section signs.

The automatic footnoting command will be a lifesaver to anyone in the academic community. The user simply chooses the footnote command and a new document appears. Here the footnote is written. Then the user goes back to the original document where the footnote is marked in the text by a musical note symbol. When the document is printed the footnotes appear at the bottom of the page numbered and in order.

Advantage II will also print your text in columns. The user can determine the number and the width of the columns and have them "snake" up and down the page.

Because *MultiMate* is a product of Ashton-Tate, users can easily merge *dBASE* files into their documents. This makes generating reports more convenient. *Advantage II* also provides file conversion formats for *VisiCalc*, *Lotus 1-2-3* and other spreadsheets.

Although any word processor worth its salt will have a good spell checker, *MultiMate*'s is truly impressive. The 110,000 word Proximity/Merriam Webster dictionary includes specialized medical and legal terminology, and can be customized by the user. The electronic thesaurus has over 40,000 root words and 470,000 synonyms.

Two features that Ashton-Tate emphasizes in its literature are hot start and hot print. Hot start allows the user to go directly from DOS into a *MultiMate* document by typing in WP, pressing the space bar and then typing in the name of the document. Hot print allows the user to print a one page document just by pressing Ctrl PrtSc. Since you have to remember the exact name of the file you're working on for hot start, and because you can only print one page and no footnotes with hot print, we didn't find much use for these functions.

MultiMate Advantage II enters the desktop publishing age by supporting laser printers. While the old *MultiMate* could support laser printers in a limited way, it is now able to incorporate laser printer fonts.

One of the more interesting additions to the new *MultiMate* is the presence of On-File. On-File is in essence a mini database composed of "index cards." Users can put information such as addresses and phone numbers on these cards and then organize them into rolodexes and mailing lists. The information is limited to what you can fit on a 3"x5" card. This may be, however, all the database many people will need.

MultiMate Advantage II is priced at $565 for the 5-1/4" disk version and $595 for the Premium Pack version which includes both 3-1/2" disks and 5-1/4" disks. For users of the Premium Pack who would like to take *MultiMate* home with them after work, Ashton-Tate is offering a "Personal Use Extension" that allows registered users personal use of the software on another computer at no extra price. The extension does not cover using two computers at one time or letting anyone else use the software on a second machine.

MultiMate Advantage II is truly a professional word processor. Now, however, you don't need to be a professional word processor to get the most out of it. This is good news for those who are in the market for a powerful word processor but don't have a lot of time to learn one.

If you already have *MultiMate* and are frustrated by some of its limitations, then you should seriously consider an upgrade. It's like getting a brand new program for $100. And the best part is, you already know how to use it!

If you're in charge of buying a word processor for the office that already has *MultiMate* the choice is clear. Do your "family" a favor. Stop being tempted by those flashy applications. Your employees are faithful and you should be too. (Ashton-Tate 20101 Hamilton Avenue, Torrance, CA 90502-1319. (213) 329-8000. Telex: 669984 ASHT TATE LSA. For information on upgrades or receiving 3-1/2" disks call 1-800- 367-8126.) ☐

High performance, Low price:
The Atlantic 386 System

Mono: $2395 Color: $2565

System includes:
- 16 MHz 80386 Processor
- 1 MB On Board (Expandable to 4 MB)
- 200 W Power Supply
- AT Case
- AT Style Keyboard
- 1.2 MEG Floppy Drive
- 360K Floppy Drive
- Hard/Floppy Disk Controller
- Video Display Card
- Monitor
- RUNS OS/2 Operating System

8MHz XT Turbo

Mono: **$510**
Color: **$670**

System includes:
- 4.77/8 MHz Turbo Mainboard
- 640K on board
- Disk drive
- 150 W power supply
- Case
- AT-style keyboard
- Video display card
- Floppy disk controller
- Printer/serial/game port
- Real time clock
- Monitor

10 MHz XT Turbo

Mono: **$550**
Color: **$710**

System Includes:
- 4.77/10 MHz Turbo mainboard
- 640K on board
- Disk drive
- 150 W power supply
- Case
- AT style keyboard
- Video display card
- Floppy disk controller
- Printer/serial/game port
- Real time clock
- Monitor

12 MHz AT Turbo

Mono: **$1245**
Color: **$1410**

System Includes:
- 8/12 MHz Mainboard
- 1 MB on board
- 200 W power supply
- AT Case
- AT Style keyboard
- 1.2 Meg floppy drive
- 360K floppy drive
- Hard/floppy disk controller
- Video display card
- Monitor
- 6/10 MHz System available . . . call

These are only a few of the system configurations we have for you. Call & reserve your configurations NOW!!!

Monitors

RGB	
Taxan 720	$295
Parco	235
TTL	
Packard Bell	75
Parco	85
EGA	
Taxan 770	569
NEC Multisync	579
EGA Autoswitch card (Taxan 560)	249

Items Reflect a 3% Cash Discount
Shipping and Handling Charges Extra
Prices and Availability Subject
to Change Without Notice
Dealer Inquiries Welcome

Hard/Floppy Disks

Teac 360	$85
Teac 1.2MB	115
Teac 720K 3.5"	125
Fujitsu 360K	75

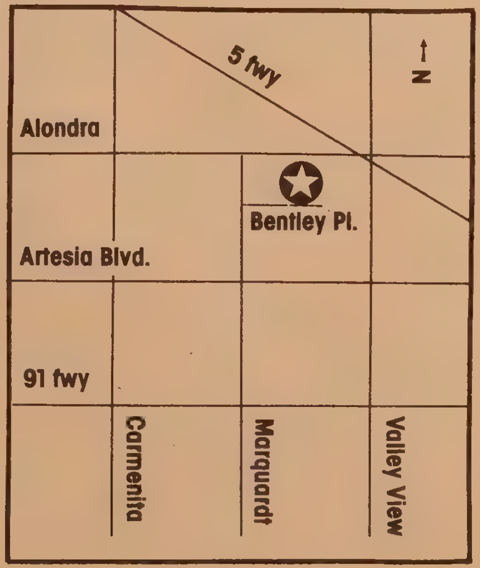
Special of the Month

Seagate ST225 20MB w/controller	285
Seagate ST238 30MB w/controller	295
Seagate ST251 40MB w/controller	440

You must bring in this ad to get this price!!

Printers

Panasonic 1080	$179
1090	219
Citizen 120D	175
MSP 10	279
MSP 15	345



ATLANTIC COMPUTER PRODUCTS

13839 Bentley Place #A • Cerritos **(213) 404-7767**
FAX: 213-404-2608

DEALER INQUIRIES WELCOME • SPECIAL DISCOUNT PRICES TO DEALERS

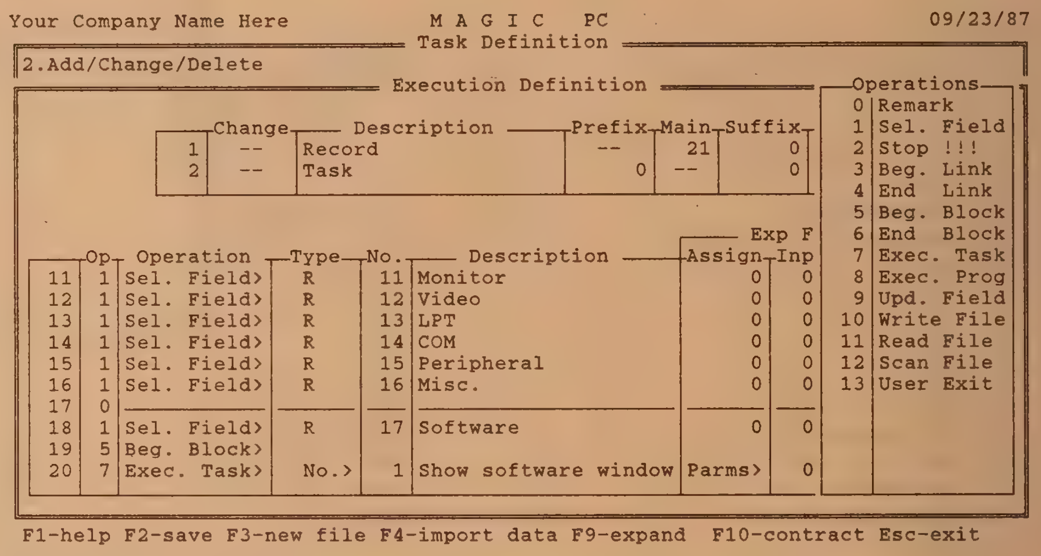
MAGIC:

More Than Hocus-Pocus

By Warren Sirota

This month we'll take a look at a table-driven application development system called *Magic*, distributed by Aker Corp. The product boasts (and delivers) many capabilities: a data dictionary-based approach to application development, strong relational database capabilities, excellent screen design facilities, and simple procedures for menu maintenance. With improvements to its report writer and minor changes to the function key assignments, this product could be a very effective vehicle for delivering snazzy applications to end-users at low cost. Although *Magic* is interpreted, run-time modules are available.

> **This product could be a very effective vehicle for delivering snazzy applications to end-users at low cost.**



```
Your Company Name Here            M A G I C   PC                        09/23/87
                                 Task Definition
2.Add/Change/Delete
                         Execution Definition                     Operations
                                                                   0 Remark
              Change    Description          Prefix Main Suffix    1 Sel. Field
            1   --    Record                   --    21      0     2 Stop !!!
            2   --    Task                      0    --      0     3 Beg. Link
                                                                   4 End  Link
                                                                   5 Beg. Block
                                                      Exp F        6 End  Block
     Op  Operation    Type  No.   Description       Assign Inp     7 Exec. Task
 11   1 Sel. Field>    R    11 Monitor                  0    0     8 Exec. Prog
 12   1 Sel. Field>    R    12 Video                    0    0     9 Upd. Field
 13   1 Sel. Field>    R    13 LPT                      0    0    10 Write File
 14   1 Sel. Field>    R    14 COM                      0    0    11 Read File
 15   1 Sel. Field>    R    15 Peripheral               0    0    12 Scan File
 16   1 Sel. Field>    R    16 Misc.                    0    0    13 User Exit
 17   0
 18   1 Sel. Field>    R    17 Software                 0    0
 19   5 Beg. Block>
 20   7 Exec. Task>   No.>   1 Show software window Parms>   0

 F1-help F2-save F3-new file F4-import data F9-expand  F10-contract Esc-exit
```

Figure: Building the actual data maintenance programs can be as simple as setting up a data view for the program to operate on, and then drawing a data entry screen with Magic's excellent screen generator.

Basic Development Steps For Magicians

Because *Magic* is such an unusual application development environment, it is instructive to look at the steps required to set up a small relational application. The one that I implemented was a PC Inventory application to keep track of the numbers of PCs kept in various locations in a company, and the names of major software packages at each location.

The Magic system has three menu levels that are always present — Systems, Sub-Systems, and Programs. The first step in creating a new system is to add an entry for it to the Systems menu, a task which is easily accomplished with a few keystrokes. Then you enter the Sub-System menu by choosing the new system with the cursor and hitting Enter, and add items to the Sub-Systems menu. Initially, you might add three major sub-systems: "Data Maintenance", "Reports," and "Utilities." You then choose "Data Maintenance" from the menu and set up Program choices of "PC Inventory Maintenance" and "Software List Maintenance." Setting up menus in *Magic* is extremely simple and requires no coding.

The next step is to define the files. This is straightforward. You must specify a primary key to be used with each data file, and you can also create additional indices. These keys can later be used by the end-user for ad-hoc search orders. The data can also be sorted on logical expressions involving combinations of non-key fields.

Once your data is defined, you can build the actual data maintenance programs. On the simplest level, this merely consists of setting up a data view for the program to operate on, and then drawing a data entry screen with *Magic*'s excellent screen generator. The Figure shows part of this process.

There are three tables displayed on the screen — two in the Execution Definition window and one in the Operations window. The top table in the Execution Definition window shows how many tasks are defined for each stage of the operation. On the line with a Description of "Record," you can see that there are 21 program lines associated with the interactive processing of each record, and 0 lines associated with the post-processing of each record (for example, updating the count of records processed). For the task as a whole, it is possible to define program lines that will be executed before any records (Prefix) and lines that will be executed after the user has finished with the records that he wants to see (Suffix). The table listed in the bottom window shows the program lines for processing each record. Mainly, this program consists of a "Sel. Field" (Select Field) operation for each database field. This operation is used to set up the view; you must select each field before you can include it on the data entry screen.

> **Once you've defined the screen and set up your validation criteria, you don't have to do any more programming to enable a wide range of functions for the end-user.**

The "Beg.Block" and "Exec.Task" commands shown in the bottom window are used to create a pop-up list of the possible choices of software packages. "Exec.Task" is actually a subroutine call which is executed when the user moves the

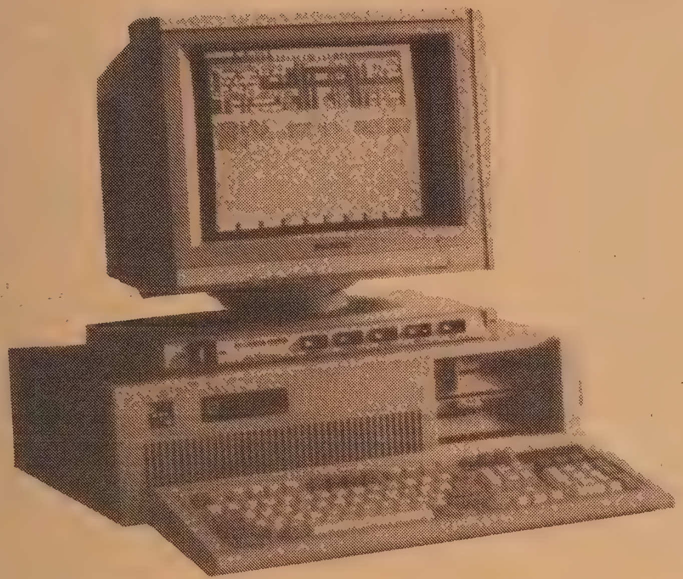
---

Copyright ©1987 by Warren Sirota. All rights reserved. Warren Sirota is a database consultant with experience in a wide range of languages. He also composes and programs computer music. He lives in Oakland and can be reached at (415) 482-3979.

Higher Speeds & Better Resolution

At a PRICE you can't resist—ON SALE NOW!

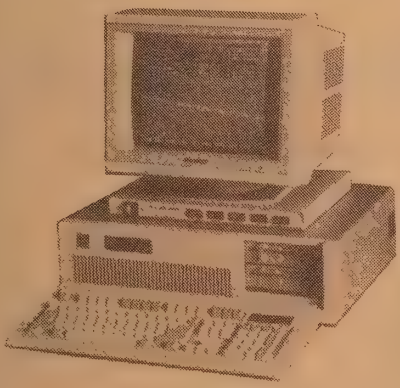
Reliable compatibility from LICA TECHNOLOGY



Turbo-12 PC/AT System 12 MHz AT !! (Si=13.3)

- 8/12 MHz turbo speed
- Hardware & software switchable
- 512KB on board, 1MB option
- 640/384 ram distribution
- AMI bios with setup routine
- 200 watt power & AT case
- 1.2MB controller/1.2MB drive
- 5060 keyboard
- Works with Novell Network

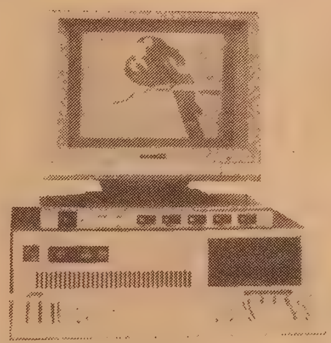
$820



16 MHz 386 System!! (SI=18.5)

- 3 Times Faster Than AT
- Excellent for Autocad & Multi Tasking
- 16MHz Intel 80386 Chip
- 1 MB DRAM on Bus
- Phoenix Bios
- 200 Watt Power & AT Case
- W.D. FD/HD Controls
- 1.2 MB Drive
- 5339 Keyboard

$1640



Turbo-10 PC/XT System 10 MHz XT!! (SI=3.7)

- 4.77/10 MHz turbo speed using standard 4164/41256 RAM
- Hardware & software switchable
- 256KB on board (640KB)
- 8088 CPU, v-20 option Si=3.7
- 150 power & turbo LED case
- FD controller/360KB drive
- 5060 keyboard
- Passed Turbo Test 99 Times

$410

PARCO 14″ Monitors

Amber, Green, Softwhite, RGB & EGA, Color

Amber/Green (Mono/graph/prnt $45)	$105
Softwhite (Mono/graph/prnt $45)	135
RGB Color (Color/graph/prnt $50)	265
EGA Color (Autoswitchable EGA $170)	375

HARD DISKS

20MB ST225 Hard Disk (w/controller)	$300
30MB ST238 Hard Disk (w/ controller)	315
60MB Wangtek Backup Tape (w/ controller)	590

Attention Airspace Employees
TRW, Hughes, Northrop and others.
Free Power Control Center
w/ Purchase of System
$40.00 value—bring your badge.

Add $35 for UPS Shipping
Cashier's Check or Prepaid Only
Dealers—Call for Pricing
Come and Visit our Gardena Warehouse

PC INTERNATIONAL
17000-M Vermont Ave.,
Gardena, CA 90247
(213) 532-4244

PC STAR
14747-A Artesia Blvd.
La Mirada, CA 90638
(714) 521-8161

> A *Magic* application can deliver a lot of power to the end-user with minimal programming time. However, since there are so many options, the user must be willing to invest some time into learning how to operate *Magic.*

cursor to the Software field and presses the F5 key to Zoom in on the field. You can define any program that you like to be executed upon activation of the Zoom command.

The Operations Window shows the other language commands that are available. Don't be misled by the small list — most of the capabilities of *Magic* are hidden in its nonprocedural part, parameters that the programmer specifies by zooming in on an item and filling in some table entries. Note that Beg. Link and End Link are used to flexibly join the starting table to other tables (the basic relational operation).

The fancy part of all this is that, once you've defined the screen and set up your validation criteria (by zooming in on some of the fields in the Execution Definition window), you don't have to do any more programming to enable a wide range of functions for the end-user. The *Magic* system automatically provides the user with facilities for adding, deleting, and changing records, as well as for searching, sorting, and filtering the database in any order. This is where *Magic* can save you a lot of time and effort.

With all this good news, it is inevitable that there would be some bad news as well. The main problem is that report generation for multiple-breakpoint summary reporting is quite cumbersome. Variables for subtotals and totals must be explicitly declared, cleared and incremented by the programmer. To be fair, it would be just as cumbersome to code this type of report in *dBASE*; however, there are add-ons to *dBASE* which make life easier. Perhaps the next version of *Magic* will include a better report generator.

Also, there is no way of stepping through a program with *Magic*. This, and the less-than-ideal clarity of the manual, make debugging *Magic* programs more difficult than it should be. There is an automated program checker, which is useful and does catch some errors, but no program checker can catch all of them.

The other problem with *Magic* is sort of a double-edged sword. A *Magic* application can deliver a lot of power to the end-user with minimal programming time. However, since there are so many options that the user can exercise, he must be willing to invest some time into learning how to operate *Magic*. It is not possible to tailor every interaction the way you can in *dBASE* (nor would you necessarily want to); in particular, there is no way to intercept and examine every keystroke, and no way to change the function key prompts that appear across the bottom of the screen. This problem is aggravated by the somewhat non-standard use of the PC keyboard inside of *Magic*. The Esc key, for example, is used to edit a field's contents, not to back out of a menu structure.

Summary

Magic is a reliable and cost-effective way to deliver powerful applications to sophisticated users; however, there are few facilities to enable the programmer to guide novice users by the hand through the application. Although programmers may find it difficult to adapt to the *Magic* way of doing things, this implementation of table-driven programming is innovative and works well in most respects. The product's main flaw is its report writer, which is graceless when it comes to handling multiple levels of subtotals. Perhaps the next release of *Magic* will improve on this. (*Magic*, Aker Corp., 18007 Skypark Circle Dr. #B2, Irvine, CA 92714, (714) 250-1718. List price: $695.00. Promotion price (as of 9/25/87): $199.00 Runtime modules: $95.00 or $570.00 for 10. The product comes with a 30-day unconditional guarantee — if you don't like the product, you can get a refund of your purchase price minus a $19.95 restocking fee.) ☐

MEGA-1040-520
XL-XE-2600
ATARI®
Computers & Software

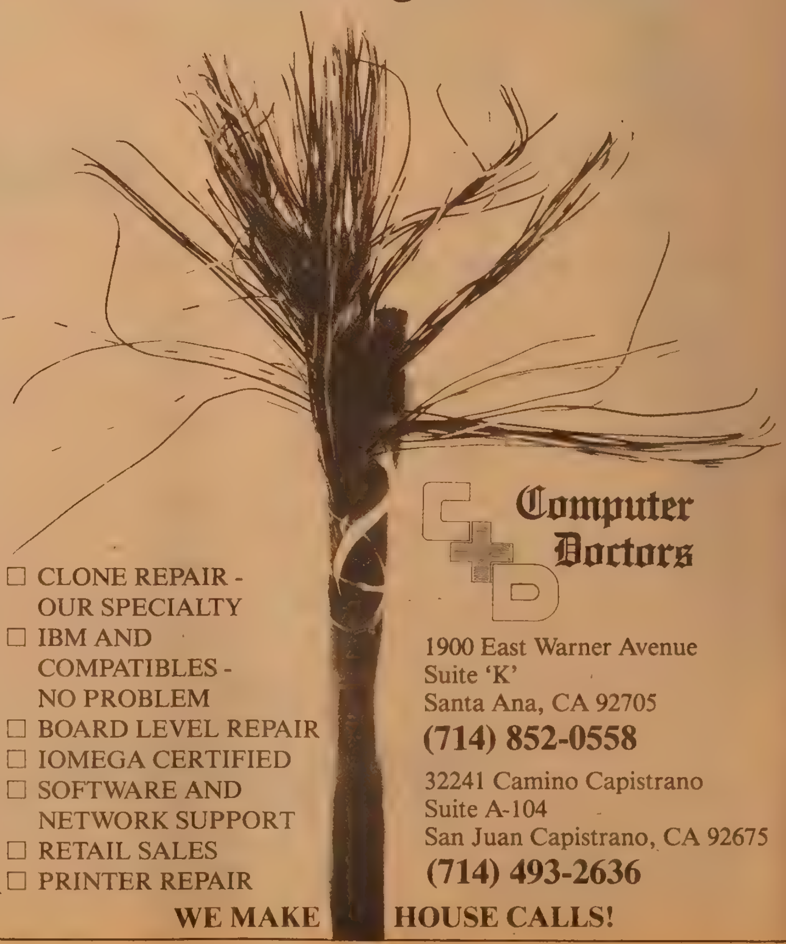
ATARI SERVICE
FACTORY AUTHORIZED NETWORK

Hundreds of Software Titles
Friendly Sales and Support
Free Class with System Purchase
Public Domain Software Library
Desktop Publishing
Try Software Before you Buy

"Your One Stop Atari Shop"

Logical Choice for Computing
6116 Lankershim Blvd
North Hollywood
(818) 760-0738

(This ad was created using an Atari 1040ST)



When your terminal goes haywire,
Your business goes terminal.

☐ CLONE REPAIR - OUR SPECIALTY
☐ IBM AND COMPATIBLES - NO PROBLEM
☐ BOARD LEVEL REPAIR
☐ IOMEGA CERTIFIED
☐ SOFTWARE AND NETWORK SUPPORT
☐ RETAIL SALES
☐ PRINTER REPAIR

C+D Computer Doctors

1900 East Warner Avenue
Suite 'K'
Santa Ana, CA 92705
(714) 852-0558

32241 Camino Capistrano
Suite A-104
San Juan Capistrano, CA 92675
(714) 493-2636

WE MAKE HOUSE CALLS!

HOLIDAY SAVINGS

XT TURBO BARE BONES SYSTEM

- 640K Turbo Motherboard
- 4.77/10 MHz Clock Speed
- NEC V-20 8 MHz Processor
- 8 slots on Board
- Math Co-processor (option)
- 150 Watt Power Supply 100/220 volt
- AT Style Keyboard
- XT Flip-top or Slide-in Case w/ reset button
- Fully assembled & tested

$199

SUPER XT TURBO - 10 MHZ

- 640K RAM on board
- 4.77/10 MHz Switchable
- NEC V-20 8 MHz Processor
- 8 slots on Board
- Multi I/O: Serial, Parallel, Game Ports, Clock/Calendar, Battery Back-up
- Dual Floppy 360K Japanese Drives
- Mono Graphic Hercules Card w/ Printer Port
- Hi Resolution (720 X 340) Monitor
- AT Style Keyboard
- 150 W Power Supply 110/220 volt
- Flip-top or slide-in Case w/ reset button & power lite

$599
Reg. $699

AT EGA TURBO (40 MB)

- 80286/12 Processor
- Zero Wait State
- 6/10 MHz Clock Speed
- 1024K RAM on CPU Board
- 8 slots on board
- 200 W Power Supply 110/220 Volt
- AT Hard Disk & Floppy Disk Controller
- 1.2 MEG Japanese Floppy Drive
- 40 MB ST 251 Hard Disk
- Power Lite, H. Disk Lite
- EGA - 256 Card
- EGA Monitor
- AT Serial Port/Game Port/Printer Port
- Clock/Calendar, battery back-up
- AT Enhanced Keyboard
- Slide-in Case w/ reset button & turbo light
- Power Light, H. Pitch Light
- Fully Assembled and Tested

$1899

ALL SYSTEMS COME FULLY ASSEMBLED AND TESTED
ONE FULL YEAR WARRANTY ON PARTS/90 DAYS LABOR

AT TURBO BARE BONES SYSTEM

- 80286/10 Processor
- 6/10 MHz Clock Speed
- Zero Wait State
- 1 MB Expandable Motherboard
- Phoenix Bios
- Clock/calendar Battery Back-up
- 8 slots on Board
- 200 W Power Supply 110/220 volt
- Enhanced Keyboard
- Slide-in Case w/ Reset Button & Turbo Light
- Fully Assembled & Treated

$529

AT TURBO

- 80286/10 Processor
- 6/10 MHz Clock Speed
- Zero Wait Slate
- 640K RAM on Board
- 8 slots on Board
- 200 W Power Supply 110/220 volt
- AT Floppy Controller & Hard Disk Controller
- One 1.2 MEG Japanese Drive
- 30 MB Hard Disk (36ms)
- Mono graphic Card w/ printer port
- Hi Res (720 X 340) 14″ Monitor
- AT Serial Port, Game Port & Printer Port
- Clock/calendar Battery Back-up
- 5339 Enhanced Keyboard
- Slide-in Case w/ Reset Button & Turbo Light, Power Light, H.D. Light
- Fully Assembled & Tested

Now On Sale! $1299
Reg. $1599

PRINTER SPECIAL

PANASONIC
1091i II
$199

PRINTERS

• MSP-10 80 Column, 160 cps	$265
• MSP-15 136 Column, 160 cps, Parallel, 15″ width	359
• MSP-20 80 Column, 200 cps, Parallel	349
• MSP-25 136 Column, 200 cps, Parallel, 15″ width	489
• MSP-55 250 cps, Parallel, 15″ width	599
• Overture 110 - 10 page per minute Laser	CALL
• OKIDATA 182	239
• OKIDATA 192+	379
• OKIDATA 193+	CALL

MODEMS

Smart One - 300/1200 Baud Internal	$79
Everex - 300/1200 Baud Internal	199

CALIFORNIA COMPUTER

CALIFORNIA COMPUTER

311 N. HARBOR BLVD.,
LA HABRA

WHOLESALE & RETAIL
HARDWARE & SERVICE

(213) 697-5686

SPECIAL SALE

HARD DRIVES

ST 251 40 MB	$369
ST 238 30 MB	279
ST 225 20 MB	259

MICE

LogiTech C7	$89
PC Mouse	99

ADD-ON CARDS

Mono graphic card w/ printer port	$49
Color graphic card w/ printer port	59
EGA - 256K Card	119
Multi I/O Card	69
Floppy Disk Controller	29

PC SYSTEMS

Finally, The Do-It-Yourself 386 Article

By Ken Milburn

Little by little, the wall between us and the computer is crumbling. Cryptic commands are being replaced by the universally understood symbols and drop-down menus of the Macintosh/GEM/*Windows* environments. It's getting easier to put words and pictures together on the same page. And the computer can be as good as you are at looking up information, taking notes and answering the telephone all at the same time. But if we're headed toward "natural" computing, we're going to need machinery that's more intelligent, versatile and agile.

Twelve issues (a whole year) ago, I wrote an article on the Intel 80386 processor chip and the promise it held for us as the engine for a microcomputer powerful enough to do all of the above. At the time, the story had to be based purely on research and the announcements made at the November '86 mega-micro-show, COMDEX. The idea was to follow up with another story recommending a general-purpose power-user's machine based on the everyday experience of using a 386-based AT clone. Who knew it would take a year to pull the most significant bits and pieces together and test them out?

Any significant new computing engine requires lots of new support circuitry and has the potential for running new types of software. The 386 is no exception. The objective was to find the answers to four questions:

(1) What components make a practical, versatile and cost-effective system? What does it take to put them together; what are the pitfalls; and how much should it all cost?

(2) What benefits does the 386 bring to *personal* computing? We can take for granted the benefits of its use as a multi-user system, network file server or mainframe gateway. But what does this muscle bring to a micro used as a general-purpose, single-user business/graphics tool?

(3) How can you protect your investment by configuring a "generic" 386-based AT-compatible to be as congenial as possible with new "standards" being set by IBM's second-generation PS/2 Series personal computers?

(4) In what ways does the 386 serve as a bridge to future developments in personal computing? In cases where new developments have been made available in the meantime, I've tried to pick those most relevant to personal computing and test them.

First, A Little Background

Although the original piece described the features of the 386 in detail, a quick recap is in order for those readers who aren't already familiar with them. The Intel 80386 is a true 32-bit processor that typically runs at 16MHz. Although it's capable of running present-day MS-DOS software in exactly the same way as an 8-bit 8088 (IBM/PC-XT) or 16-bit 80286 (IBM/PC-AT), it does it much faster: 16-20 times as fast as the original XT; two to three times faster than (already fast) ATs. How these lightning speeds impact day-to-day computer use will be a main theme in this article.

The wonders of the 386 don't stop with speed. The processor is capable, when used with more advanced software, of making it practical to implement a quantum leap in user-friendliness and productivity. No more 640K RAM barrier, so (given a battalion of memory chips) you won't have to worry about the size of an application, how many memory-resident pop-up programs you've loaded or how many regular programs you want to run simultaneously.

The schizophrenia brought on by the PC's separate text and graphics modes can disappear, because the speed of the 386 makes it practical to run all applications within a graphical environment similar to that on the Macintosh. So instead of having to type in hard-to-remember codewords for commands, visual signposts (icons) and pull-down menus can be used. It also means you can easily mix words and pictures and present characters in any size or style.

Moreover, that same operating environment can be universally configured for all peripherals. In other words, any program written specifically for GEM or *Windows* automatically uses the full capabilities of your high-resolution color display, your plotter or your laser printer. No need to configure each application separately for each device. Finally, the 386 is engineered for multitasking. In plain English, you can do more than one job at a time. Most of us use more than one office tool at a time when we're not at our computers. So multi-tasking on a single-user micro contributes to the "naturalness" of using the machine and, therefore, to productivity.

Most of the prophecies in the original article have since come true. Nearly every manufacturer, including AT&T and Tandy (despite their announcement that they would wait to follow IBM's lead) has announced a 386-based AT clone. IBM, sure enough, decided to introduce entirely new systems architecture along with their 386-based PS/2 Model 80. But no matter. New 386 AT clones are introduced almost weekly and they'll all run the new operating systems (OS/2 & Presentation Manager) and programs written for the second-generation PS/2 IBM machines. To be sure, IBM will add some non-compatible enhancements of its own to the new OS, but its announced products are mainly designed to bridge with software on larger IBM systems.

The best news is that prices have tumbled. In '86, the least expensive base 386 box (case, motherboard, RAM, power supply and 1.2Mb floppy) sold for $3,500. Today, you can buy the same configuration from several vendors for about $2,000.

Getting It All Together

It all started when a company then called RAM Systems sent me a new 386 motherboard for testing. Once installed in an AT chassis, their board proved to be super-reliable and (surprising, so early in the game) problem free. It ran every bit of the software in our library without a hitch, too. Unfortunately, no sooner was I ready to sit down and write about it than RAM Systems sold out to a larger company, disappearing clean out of sight in the process.

Having to start all over again gave me the opportunity to pick and choose components from the ground up. There may be no such thing as a computer for everybody, but the ideal was a machine that made the best compromises for the largest group of users. That meant that it had to be just as good at graphics as text, and that it had to display "business-level" color as well as monochrome. A fixed disk drive is a given in any "power" system. This one had to be capacious enough to work with large applications, database and graphics files and quick enough not to bottleneck an otherwise fast system.

An Enhanced Graphics Adapter (EGA) seemed the logical choice for the best compromise between cost and versatility, while the use of a multi-scan monitor seemed imperative — if, eventually, it became necessary (or desirable) to be compatible with the PS/2 series' analog VGA display standard.

Consideration of VGA compatibility was only part of the scheme for making this configuration compatible with the widest possible range of IBM-endorsed "standards" for add-on hardware, disk formats and operating systems. In order to maintain maximum versatility and to protect one's investment, the system should work with as much of the PC's hardware as possible while providing for compatibility with at least the most important aspects of the second-generation PS/2's requirements.

Keeping all of the above in mind, here's how I configured the machine and why I picked the specific components.

System vendor: Micro 1. They showed a keen enthusiasm for the project and were willing to bust their buttons to support it and keep me educated as to the availability of new developments. Among local clone vendors, they are a major player which configures, repairs and supports a wide range of PC-clone systems. One of those systems happened to include the motherboard and drive bay configuration we wanted.

Motherboard: Intel 80386/AT. This board was picked mainly on the theory that the maker of the processor would be the manufacturer least likely to evaporate in the heat of competition, because it used the most popular clone BIOS (Phoenix) and because the board's architecture is safe to the point of being boring. Several other board makers (notably Compaq and PC's Limited) use various methods of accessing very high-speed memory chips in order to capitalize on the performance potential of the 386. I was willing to sacrifice a small amount of performance for problem-free use of memory boards (and other cards) designed for the XT and AT. So far, not a single expansion card has failed or turned flaky on account of not being able to keep up. The higher performance boards may make more sense in multi-user systems, single-purpose machines (such as dedicated CAD workstations) and as file servers on a network.

The first board installed had two major problems, both of which have been resolved in current versions: (1) The 80387 math co-processor was incompatible and would cause the ROM/BIOS chip to fail. (2) The initial version of the Phoenix 386 BIOS wouldn't support the use of

---

Copyright ©1987 by Ken Milburn. All rights reserved. *Ken Milburn is a freelance writer on Microcomputers. His articles have appeared in numerous computer publications, including PCWorld, InfoWorld, Computer Graphics World and MicroTimes. He also does system configuration for small businesses. He can be reached at (415) 331-6926 or by sending E-mail to (ken) on the WELL, (415) 332-6106.*

APPLE COMPATIBLE DISK DRIVES

½ Height Apple Comp	$95
Full Ht. Apple comp.	99
IIc ½ Height Floppy Drive	105
Macintosh 800K	180
Apple IIgs Drive	169

APPLE TYPE CARDS

IIe 80 Column w/64K	$44
IIe 80 Column w/128K	.59
Disk Controller	.42
Parallel Interface	.40
Graphics Parallel	.59
16K RAM Card	.34^{95}
Super Serial Card	.69
CPM Card	.44
No Slot Clock	.44

DISKETTES

DS DD 5¼″ Box of 10	$5
DS DD 3½″ 10 Pieces	13^{50}
Apple & IBM Joysticks	$22
6 Outlet Surge Protector	9

MOUSE SPECIALS

Witty Mouse Microsoft & PC Mouse Comp System	.54
M-2 Mouse w/Microsoft & PC Mouse Software	$64
IMSI w/Dr. Halo & One Look Software	79
OPTICAL w/Dr. Halo & One Look Software	114

CHIPS

Due to Price War Please Call For Best Prices 16K, 64K, 256K, 1 Meg 2716, 2732, 64, 256, 8087, 8087-2, 80287-6, 80287-8, 80287-10

STOP

AND COMPARE OUR PRICES

IBM COMPATIBLE DRIVES

TEAC 55BV ½ Height 360K	$88
Fujitsu ½ Height 360K	.80
Toshiba 1.2 Meg AT	.119
Toshiba 3½″ 720K with 5¼′ mounting kit	.144

IBM TYPE CARD

Floppy Controller	$34
Clock Card	.34
Serial Card	.34
Multi I/O	.69
Hard Drive Controller	.84
Monochrome w/Print	.54
No Slot Clock	.44
DOS 3.2 w/GW BASIC	.69
20 Meg w/Controller	.299
30 Meg w/Controller	.345
Samsung Amber Monitor	.82
Clock Card w/Serial Port	.44

MODEMS & CABLES

1200 Baud External w/Software	$69
IBM 1200 Baud Internal	99
1200 Baud HC AVATEX	.115
2400 Baud HC AVATEX	.249
1200 HC EXTERNAL	.89
2400 HC EXTERNAL	.195
300 Baud External	.44
6′ Parallel Cable	.8
Serial M-M or M-Female	.9^{50}
IIc Modem Cable	.10
IIe to IIC Drive Adapter	.10

We Ship Daily • 90 Day Replacement Warranty
DEALER Inquiries Welcome • Minimum $2 Shipping Charge

GUENTHER
COMPUTER PRODUCTS INC.

312 Locust St.
Santa Cruz, CA 95060
New Larger Location To Serve You Better

(408) 458-9404

Please Include
3% Shipping Charge

PS/2-compatible 3.5" diskettes.

Serial/Parallel Ports (I/O card): Everex EV-170A Mini I/O ($90). The motherboard comes with a built-in parallel printer port and a serial port, but we needed at least another serial port. After having difficulty setting communications protocols in several cheap Taiwanese cards, I settled on Everex's Multi/IO and disabled the ports on the motherboard. The Everex board is inexpensive and comes with two serial and two parallel ports that can be easily set up for any I/O address or protocol. Furthermore, great documentation and an on-disk set-up tutorial and diagnostics make this one of the few I/O boards worth having.

Memory expansion: For reasons I'll explain later, 386es are most useful when there's at least an extra 2Mb of RAM installed above the basic 640K.

There are numerous alternatives for doing this. For general-purpose use, I felt price was more important than performance. Therefore a 3Mb **Everex (EV 159)** was chosen because it could be configured either as AT extended RAM (important for running *Windows 386*, OS/2 or *DesqView*) or as Lotus/Intel/Microsoft Expanded Memory (EMS). The AST/Quadram EEMS subset costs more, but does little for a 386-based computer since both *Windows 386* and *DesqView* can load themselves into extended memory. From a performance standpoint, true 32-bit memory is the best answer. The problem is cost: you have to buy it from the manufacturer of your motherboard, and being a captive buyer means paying a premium.

Floppy disk drives: TEAC 5.25" 1.2Mb; TEAC 3.5" 720Kb. The 5.25" drive was chosen for two reasons: (1) It does a very good job of reading, writing and formatting *all* IBM-standard formats. That eliminates the need for a separate 360K drive for transferring data to and from PCs and XTs. I've used a Toshiba drive successfully in this way, too. (2) Price and availability. TEAC drives usually sell for a bit less and are so plentiful you'll never have trouble replacing a broken one.

The 3.5" drive is 720Kb because, at the time, there simply weren't any of the 1.4Mb types found in IBM's pricier PS/2 models. I wanted a 3.5" drive in the system so I could exchange files directly with anyone who had a PC-compatible laptop or any of the PS/2 systems. This is obviously the coming standard for floppy disk drives, so it bridges to the future. Besides, Macintoshes, Atari STs and Amigas all use similar formats, so you can transfer data back and forth with the aid of the proper file transfer software. The TEAC was chosen because it was the only one of several brands we tried that plugged in and ran as a 720K drive B:. No special drivers, possible I/O address conflicts or configuration hassles. At a mere $150, this drive is worth its weight in gold.

Disk controller: Western Digital. Simply the most commonly-used controller for AT systems in the industry. Its popularity makes it easier to track down controller problems, should they occur. An RLL-type could have formatted the hard disk at 50% greater capacity, but my feeling was that these controllers might decrease the lifetime of the drive.

Instead, I used the **Awesome I/O Card.** It is neither a disk controller nor an I/O card for printer and modem ports. It's a combination battery-backed disk cache and data-compaction board. Without optional enhancements, it cut the drive access by better than 85%. At five milliseconds, access is so fast you can hardly tell the difference between RAM operations and disk reads and writes. The caching scheme should also improve the reliability of the drive itself, because head movement is cut by 85%. But the best news of all was the 37% increase in drive capacity afforded by the Awesome card. What started out to be a 70Mb drive now holds 105Mb worth of data. If you bought a 100Mb hard disk instead of a 70Mb drive, the extra capacity could easily cost as much as the Awesome. I'm impressed.

Installing the Awesome is duck soup: Plug it into a 16-bit slot, install some drivers in your config.sys file. Watch Lotus load before you can get your finger off the return key. Look, Ma! No cables! No dipswitches!

Fixed disk drive: Atasi Model MT3085 70Mb 25ms plated media drive. Before the Awesome card became a reality, fast access seemed a paramount consideration in picking a hard drive for any computer as quick as this one. The Atasi claimed the fastest access of any drive in its price range — nearly twice as fast as the 39ms drive in IBM's 20MB AT.Plated media was also a consideration if RLL formatting seemed desirable at some future date.

The drive was delivered in person by a very nervous Tandon representative. During his flight up from L.A., it seems the drive had fallen from the overhead luggage compartment and landed in the passenger aisle. Nevertheless, the drive installed and formatted without a hitch — a good testimonial to its reliability.

Monitor/Display Card: Paradise Autoswitch 480. NEC Multisync. Both these items were chosen for proven performance, popularity and reliability.

The Paradise card comes with an exceptionally long list of 640X480 resolution applications drivers. This resolution is not only significantly sharper than the standard EGA 640 X 350, it produces a square dot. So images on the screen are proportionately the same as the image on a 300 dpi laser printed page.

Ease of configuration was also a major factor in choosing the Paradise card. As its name implies, it automatically senses which display mode an application requires and which monitor it's connected to. Although dipswitches and jumpers are present on the board to force specialized configurations, most users will simply "plug and play."

There are already some PS/2-compatible VGA boards on the market, mostly for about $100 less than IBM's. I wanted to wait for Paradise's Pro VGA, which is both BIOS and hardware register compatible with VGA. It can also produce 256 simultaneous colors in the high-resolution VGA mode, provided you have software written to run this way. The card won't start shipping until some time after this article was written.

Mouse: Logitech. Any system that incorporates graphics needs a pointing device. With *Windows* emerging as the operating system user interface of choice, a Microsoft mouse is bound to be one of the cheapest and most easily configured. The problem with the MS Mouse, as I see it, is that it isn't all that easy to program for applications that weren't written to work with a mouse. The Logitech mouse is easy to program, has an extra button for added flexibility and is 100% MS Mouse-compatible. It costs 30% less than Microsoft's offering, too. No contest.

The Practical Realities

The system, as I've described it here, provides a great platform for almost any kind of single-user computing. Although it's true that there's still no operating system or software that fully capitalizes on the power of the 80386 CPU, the raw speed of the machine does make it an appropriate vehicle for running multiple PC/MS-DOS applications simultaneously — and within a purely graphical environment like *Windows 386*.

In spite of the fact that neither OS/2 nor any applications software has yet been introduced that takes full advantage of the 80386, there are great benefits to be gained from using *DesqView 2.01* and/or *Windows 386*. Either system makes it possible to run multiple applications at the same time, even if they total more than 640K. Since the 386 incorporates the hardware to emulate both the AST/Quadram Enhanced Expanded Memory System (EEMS) and Lotus/Intel/Microsoft EMS 4.0, you can use any memory board that can be configured as AT *extended* memory. I've run both these environments successfully on the machine described in this article.

As a reviewer of both software and hardware, I've had the opportunity to throw almost everything at this machine but the kitchen sink, including *AutoCAD*, *AutoShade*, *Ventura Publisher*, *Lumena* and a variety of less demanding "business" programs. I've also plugged in internal modems, fax cards, a PostScript laser printer, scanners, digitizing pads and a host of memory cards and backup systems. Unless I goofed on the installation instructions, all of them worked without a hitch. ☐

386 RESOURCES

Intel motherboard, case, power supply, keyboard, TEAC floppy drive, 80287 math co-processor, Western Digital AT controller.
MICRO 1
557 Howard St.,
San Francisco, CA 94105
(415) 974-6593

Atasi Model MT3085 25ms 70Mb Hard drive. This drive is sold only to OEM customers, who in turn, provide it as an upgrade kit or include with a computer. Tandon, Atasi's parent company, can provide further information.
TANDON COMPUTER CORP.
269 Mount Hermon Road
Scotts Valley, CA 95066
(408) 438-8729

EVEREX products
Mini I/O card
Extended/Expanded Memory card, TEAC 3.5" floppy drives.
CLUB AMERICAN TECHNOLOGIES, INC.
3401 W. Warren Ave.,
Fremont, CA 94539,
(415) 490-2201

Awesome I/O card:
CSSL, INC.
909 Electric Ave, Suite 202
Seal Beach, CA 90740
(213) 493-2471

NEC MultiSync monitors:
NEC HOME ELECTRONICS
1255 Michael Drive
Elk Grove, IL 60191
(312) 860-9500

Paradise EGA and VGA cards:
PARADISE SYSTEMS, INC.
217 E. Grand Ave.
South San Francisco, CA 94080
(415) 588-6000

Logitech C7 mouse (several models):
LOGITECH, INC.
805 Veterans Blvd.
Redwood City, CA 94063
(415) 365-9852

LARGEST COMPUTER SOFTWARE STORE ON THE WEST COAST!

COMPUTER SOFTWARE BANKRUPTCY LIQUIDATION CHRISTMAS SHOPPING LIST

WE HAVE OVER 500,000 PROGRAMS IN STOCK...IF YOU HAVEN'T BEEN ABLE TO FIND SOMETHING, CALL US—WE MIGHT HAVE IT.

ATARI

400 - 800 - 1200XL

6 for $25 5.99 ea.

CASSETTE

Mega Points • Adventureland • Claim Jumper • Maze Of Death • • Fort Apocalypse • Ghostown • • Name That Song • Bug Attack • • Alien Hell • Earthquake • Frogger • Preppie • Preppie 2 • Math Football • The Count • Galactic Avenger • Martesoro • Apple Panic • E Factor • Mission Impossible • Galactic Trader • Labyrinth • Voodoo Castle • Zaxxon Hangman • Megalegs • Reaches Of Asphai • Astron 5 • Rescue At Rigel • Drac Is Back • Tutti-Frutti • Pharoahs Curse • Eliminator • Compu Math • Blockbuster States & Caps • Rescue At Rigel Bomber Attack • Blockbuster • • Figure Fun • Kid Grid •

CARTRIDGE

Super Breakout • Centipede • Choplifter • Donkey Kong • • Fast Eddie • Worm • • War • Pac-Man • Jungle Hunt • Asteroids • Krazy Kritters • Galaxian • • Joust • Star Trek • Gorf • Qix • Jumpman Jr. • Springer • • Slime • • River Rescue • • ET Phone Home • • Captn Beeble • Alien Ambush • Krazy Antics • Cloudburst • BC's Quest for Tires •

VIC-20

6 for $25 5.99 ea.

CASSETTE

Galactic Blitz • Alien Invasion • Vicman • Add 'Em Up • Crush, Crump, Chomp • • Antimatter Spatter • Kosmic Kamikaze • • It's A Living • Typing Tutor • • Mad Painter • Number Chaser • Mach-20 • Racefun Snake • Meteor Shower • Torg 3-D Man • Asteroid Attack Pinball Wizard • Gridder • • Touch Typing • City Bomber • Vicheck Loan Analyzer • Vicat Home Inventory Cavity Fighter • The Catch Paratrooper • Snakeout Cyclons • Chimp Chase Monster Match • Simon Screen Print • Super Hangman Exterminator • Matchmaker 64 • Ronnie Defender Tri • Salmon Run • Alien Star Command • Renaissance • Panic Computer Artist • Outworld • Skymath

CARTRIDGE

• Protector • Raid On Ft Knox • Mutant Herd • Turtle Graphics Frogger • Dig Dug • Gold Fever • Voodoo Castle • Robotron 2084 • Turmoil • Shamus • Defender Qbert • Jupiter Landing • Buck Rogers • Scorpion Alien Blitz • Radar Ratrace • Congo Bongo • Midnight Drive Pinball Spectacular • Spiders of Mars • • Donkey Kong • • Gorf • Super Alien • Star Trek • Omega Race • Gridrunner • • Amok • Fast Eddie • Pacman • Spider City • Muncher • Apple Panic • Meteor Run • Roblitz • Cloudburst • Master Type • • Centipede • Satel & Meteor • • Deadly Duck • Skibbereeb •

C-64

3 for $25 9.99 ea.

DISK

• Easy Match/Count • Chess • Mabels Mansion • Mindshadow Kwik-Calc • Kidwriter • Pitfall 2 Lunar Outpost • Micro Division Hacker • Kwik-File • Aztec • Music Calc 3 • Music Studio • Music Construction Shamus • Sargon 2 • BC 2 Grog's Revenge • Omega Race • Household Finance A Bee C's • Fast Eddie Alphabet Zoo • Search For The Amazing • Oil Barons • Paint Magic Evolution • Fishmetic • Playnet • Deadline • Candy Bandit • Check ease • Decathalon • Drelbs • Q-Bopper • Chopper Math • Kwik-Check • SAT Algebra • SAT Vocabulary • Computer Diet • SAT Sample Tests

CASSETTE

Pharoahs Curse • Alien Invasion Loan Analyzer • Computer Coach Quick Brown Fox • Keyboard Coach Snakman • Gortrek & Microchips Matchmaker 64 • Ft. Apocolypse • Think Twice • Dunjonquest Go • Sentinel • Eliminator Shamus 2 • Cyclons 64 Necromancer • Car Costs • • •

CARTRIDGE

• Congo Bongo Protector 2 • Defender Jukebox • Dig Dug BC Quest For Tires • Radar Rat Race • Popeye Serpentine • Miner 2049er Rootin Tootin • Star Ranger Alpha Build • Tooth Invaders Buck Rogers • Music Machine

Intellevision

• Armor Battle • Burgertime • Dragonfire • Spacebattle • Bomb Squad • Poker & Blackjack • Beauty & the Beast • Microsurgeon • Space Spartans • Space Armada • Donkey Kong • Carnival • Star Strike • Astromash

CARTRIDGE

3 For $15 $5.99 ea.

TRS-80

Astrology Bedlam Bounceoids The Changer Death Planet Space Intrud Rear Guard Fire Copter Sea Dragon Dracula Eureka Count Flipside Starquest Tanjali Spox Laser Ball Combat Mean Craps Machine Micro Checkers Mission Impossible Missle Attack Mystery Fun House Galactic Revolution Golden Voyage Regilian Worm Savage Island Lowball Poker So Big/Small Space Chase Crowley Manor

CASSETTE

6 For $25 $5.99 ea.

TI99/4A

Addition & Subtraction • Dig Dug Defender • Reading Rally • Beginning Grammer • Multiplication • Munchman Early Learning • Jawbreaker 2 Minus Mission • Reading Fun

3 For $25 $9.95 ea.

CARTRIDGE

TIMEX SINCLAIR

10/$15 2.99 ea

16K MEMORY *LIST $49.95* **$14.95**

Algebra • Budgeter • Carpooler • Challenger • Cube Game • Matrix Planner • Checkbook Manager • Dungeon Of Algebra Dragons • Chess • Power Pak 1 • Collector Companion • College Cost Analyzer • Coupon • The Fact One • Manager • Crossword • Doobarry Domino • IRA Planner • 5-2K Games • Electronic Checkbook • Forget Me Nots • Home Education • Trigonometry • Guitar For Beginners • Gulp • Home Brewing • Home Improvement Planner • Insurance Property Record • Loan Mortgage Amortizer • Money Manager • Manufacturing Control • Mixed Game 2 • Mixed Game 3 • Organizer • Money Analyzer 1 • Money Analyzer 2 • Presidents • Presidential Campaign • Wall Street • Programming Kit 1 • Quiz Kit • Robbers Of The Lost Tomb • Stamp Collector • Star Battle • States & Capitals • Statistics • Stock Returns Stock Option Analyzer • Super Math • Sycons Revenge • Teachers Gradebook

DEC RAINBOW

75% OFF LIST PRICE

Microsoft Multiplan	Spreadsheet	list $275.00
Rainbow 100	Operating System	list $250.00
Professional 300 Series	Communications Prog	list $195.00
Select 86	Word Processor	list $395.00
Microsoft MS DOS	for Rainbow 100	list $275.00
Infostar	Database Mgmt Sys.	list $695.00
dBASE II	Database Mgmt Sys	list $250.00

OSBORNE CPM

75% off list price

Real Estate Investor	Real Estate Evaluating	list $295.95
System Checker	Testing Program	list $119.95
E Numerator	Numbers Files	list $ 39.95
Extended Utility Disk	Doubles Storage	list $ 95.00
Money Maestro	Manages Money	list $149.95
Amcall	Speed Dialing Prog.	list $295.95
Footnote	Formats Note Calls	list $ 89.95
Spell Guard	Proofreading Program	list $ 69.95
MODEM	ONLY $29.00!	list $239.95

DOS 2.11 & G.W. Basic

BOTH TOGETHER AS LOW AS... $20.00

1-UNIT	39.95	64-UNITS	25.00
16-UNITS	30.00	128-UNITS	22.50
256-UNITS	20.00		

ATTACHE SOFTWARE

Finest Accounting System For Your IBM or compatible.

• Accounts Receivable • Accounts Payable • • General Ledger • Sales-Invoice • Inventory •

BUSINESS SOFTWARE

$149.95 ea. (list $595) **ALL 5 $499.95**

GAMES

LIST $49 95

$9.95 ea.

3 for $25

Acey Deucey • Final Frontier • Russki Duck • Space Chase • Mr. Robot & Factory • Liberator • Sword Thrust • • Game Show • H.C. Football • • Neptune • Mabels Mansion • • Game of U.S. • Micro Painter • Invasion Force • Backgammon • • Ardy • Pro-Pix

APPLE BUSINESS

GENERAL LEDGER	LIST 250 00	19.95
ACCOUNT PAYABLE	LIST 250 00	49.95
ACCOUNT RECEIVABLE	LIST 250 00	49.95
PAYROLL	LIST 250.00	49.95
CONDOR 1 (DB)	LIST 350.00	39.95
CONDOR 3 (DB)	LIST 650 00	49.95
4 IN 1: SPREADSHEET, WORD PROCCSOR, DATA BASE, MAIL LIST	LIST 179 95	49.95
MICROSOFT MULTITOOL, BUDGET	LIST 159.95	29.95
MICROSOFT MULTITOOL, FINANCIAL STATEMENT	LIST 159.95	29.95
AGRILEDGER (FARM)	LIST 550.00	99.95
LOGOMOTION (LANGUAGE)	LIST 450.00	49.95

MACINTOSH DEPT.

$39.95 ea. 3/$99.95

MACLION
Data Base Management
LIST $395.00

FILEVISION
Visual Filing System
LIST $295.00

FRONT DESK
Calendar Scheduling
LIST $195.00

MAIN STREET FILER
Info. Management System
LIST $295.00

DB MASTER
Information Management System for Business
LIST $295.00

For IBM and compatibles

Retail Sales Management – A stand-alone business aid program that handles batch invoice control and client file information. **$19.95** LIST $59.95

EZ • Telephone – An uncomplicated yet thorough telephone database. (Stores up to 500 names). **$9.95** LIST $35.95

Stock charting – Charts your stocks with ease and precision. Produces clear, concise charts of your stock's market movements. **$9.95** LIST $49.95

Memory Disk – Converts your computer's unused memory into one or two very fast disk drives. **$9.95** LIST $59.95

Multi-RAM – Lets you run several programs simultaneously – diverse software packages can also exchange data. **$19.95** LIST $99.95

MINDLINK - flashes nearly invisible subliminal messages on your screen while you are using other software. "Program" your subconscious mind to help you Lose Weight, Stop Smoking, Relieve Stress, Strengthen Memory & Gain Confidence.

Does All This & Much More :

$14.95 LIST $89.95

BLANK 5 1/4 DISK

100% Guar.

DS DD **$4.99 pk**

PAK OF 10

*USED ONCE BY BIG COMPANY

TIVAC SLEEVES
$3.99 per 100
$30.00 per 1000
"PREPRINTED"

3-RING DOCUMENTATION BINDERS
4 for $5.00
1.99 each
HOLDS DISK, NOTES, ETC.

MINI VACUUM
$9.95
LIST $29.95
CLEANS KEYBOARD, DISK DRIVE ETC.

JOYSTICK EXTENSIONS
VIC-20, C-64, ATARI, APPLE
$2.99
LIST $9.95
ALSO: Y ADAPTORS FOR 2 JOYSTICKS IN 1 PLUG.

Better Than Joysticks
UN-ROLLER CONTROLLERS
Higher scores, easier to use than joysticks
NEW DESIGN
$15. pair
LIST 39.95
ALL ATARIS
VIC-20
C-64

BOOKS

$2.99 EA

4 /$10

C-64
- Inside DOS
- Kids To Kids •
- Kids & The C-64 •
- Intermediate C-64 •
- Home Companion •
- Games C-64 Plays •
- Game Construction •
- Musical Commodore •
- Computer Playground •

ATARI
- Musical Atari •
- Computer Playground •

APPLE
- • How To Write A Program •
- • Graphically Speaking •
- • Elementary Apple •
- • Apple Basic Kids •
- • Kids To Kids •

ALL COMPUTERS
- 101 Uses For A Computer
- Computer & Young Minds
- Computer In Your Pocket
- Software Authors Guide

TRS-80
- Kids To Kids

IBM-PC
- Kids To Kids
- Computer Snooper
- PC Experience

VIC-20
- • Elementary Vic
- • Kids & The Vic-20
- • Programmers Guide
- • Computer Playground

"Funniest book in the world!"
BOOK OF
101 USES FOR YOUR COMPUTER
ONLY **$1.00** WITH ANY PURCHASE (LIMITED SUPPLY)

DESKTOP COMPUTER SAYINGS
$1. "Our Software Is Compatible" $1
"Let's link our terminals"
"Worlds Greatest Computer Operator"
"Programmers do it better"
$1. "I'm warm for your readout" $1
"Wiz Kid at Work"

(714) 751-2667

PHONE ORDERS:
M-F 10AM-6PM
PACIFIC TIME

A.T.&T. LIQUIDATORS
2640 SO. HARBOR BLVD.
SANTA ANA, CA 92704

NOT AFFILIATED WITH AMERICAN TELEPHONE & TELEGRAPH

TERMS:

MINIMUM ORDER $25.00

All prices quoted are for cashier's check, money order, or cash. Personal, business checks or credit cards add 5%.

California Residents add 6%

Order	Shipping Charges
$25.00-$100.00	$7.50
$101-$200	$15.00
$200 plus	FREE

DISKS ONLY

These disks do not have documentation. They all boot up real easy & are easy to use. Values to $250.00 each.

ATARI

Math Football • The Bookkeeper Jeepers Creepers • Decimals • Acey Duecy • Timewise • Eastern Front 1941

$2.99 ea.

CPM • Super Calc • • CPM Utility • CPM System •

APPLE

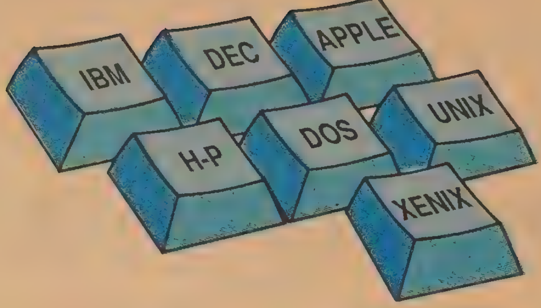
Payroll Tax Data Disk Option X • Volcanoes Meet The Presidents 1 Meet The Presidents 2 Meet The Presidents 3 Meet The Presidents 4 • L.A. Land Monopoly • Spell Master Adult • Game Of The U.S. • Spelling Carnival • Little Counter • Little Speller • Perfect Calc

4 for $10.00

WE BUY SOFTWARE!

ALL KINDS: ASK FOR ART!

◆ (714) 751-2667 ◆

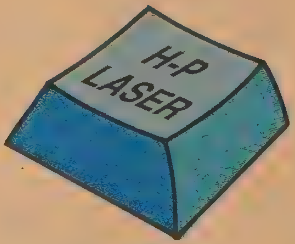


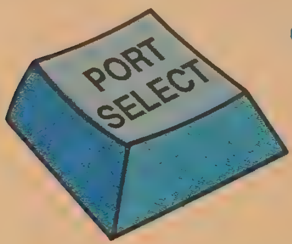
Total compatibility
across computer
systems, protocols
and operating systems.

**IMC Data Manager
Products Are Transparent To the User
— No Software to Load!**

100% Hardware and Software Compatibility

100% hardware and software compatibility with H-P laser printers or compatibles — from cabling and protocols (like end of document controls), to the latest desktop publishing software.



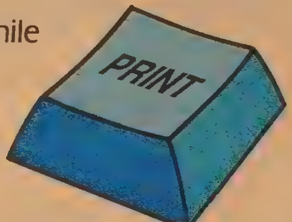


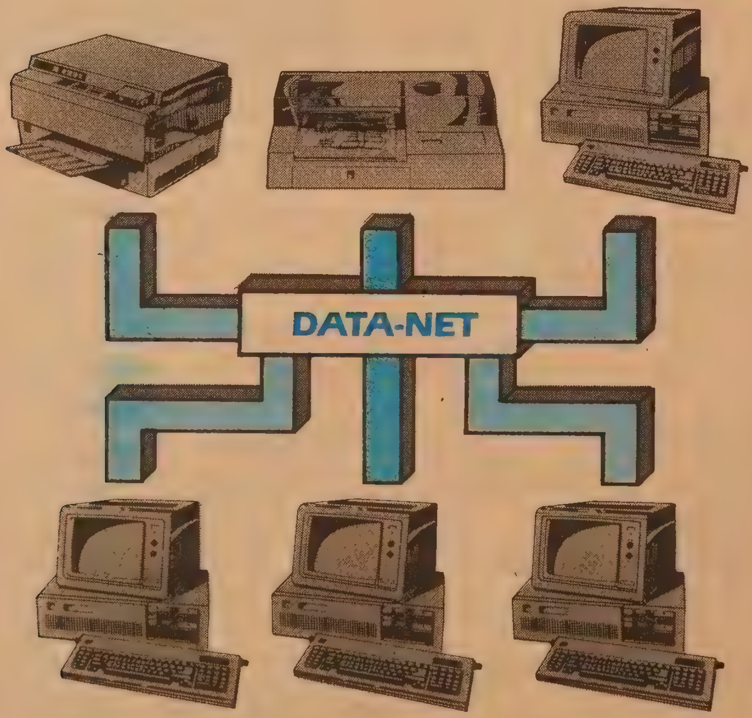
Connect Computer to Computer Or Multiple Computers to a Printer

Data PBX features of the new DATA-NET resident program lets you connect computer to computer, multiple computers to a printer, and each port can be selected for input or output.

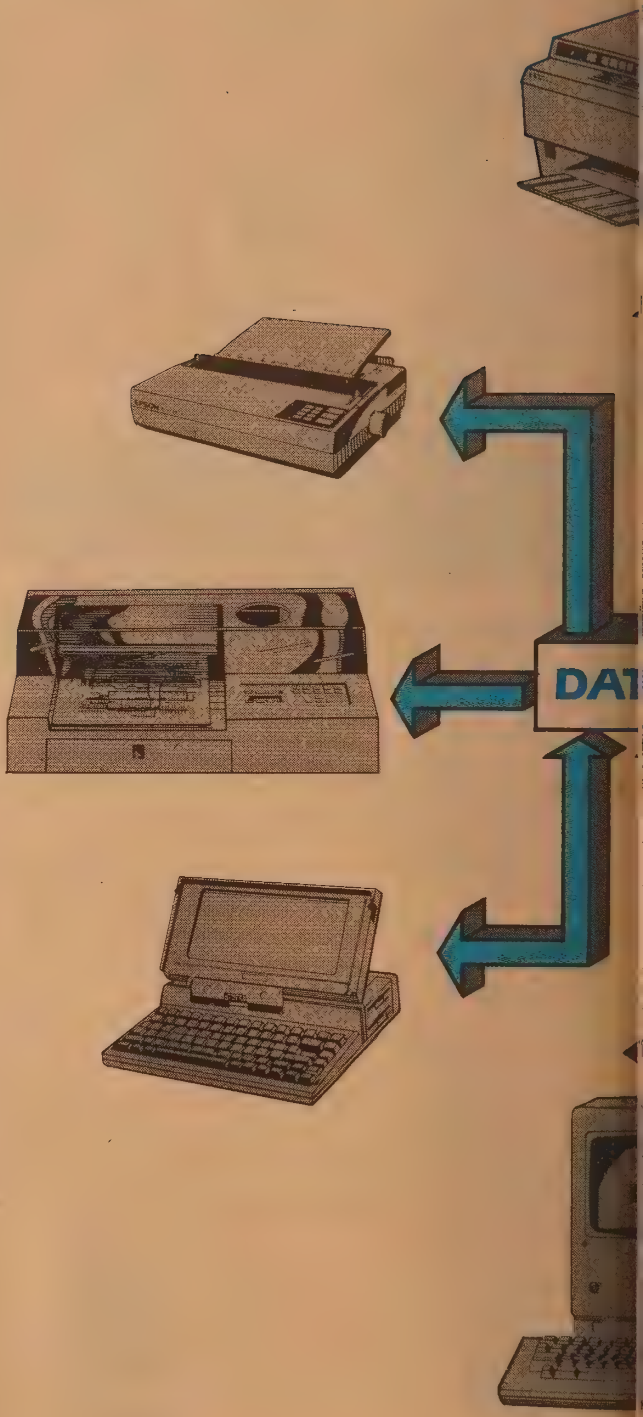
Simultaneous Operation

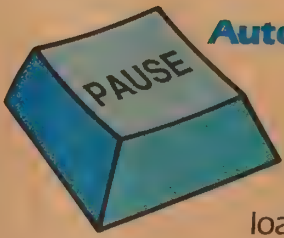
Want to run three computers to one printer while plotting from a fourth computer? Simultaneously? The new IMC DATA-NET does it all when it comes to printing, with up to a Megabyte of REM for buffered spooling.





Make a fev
into net



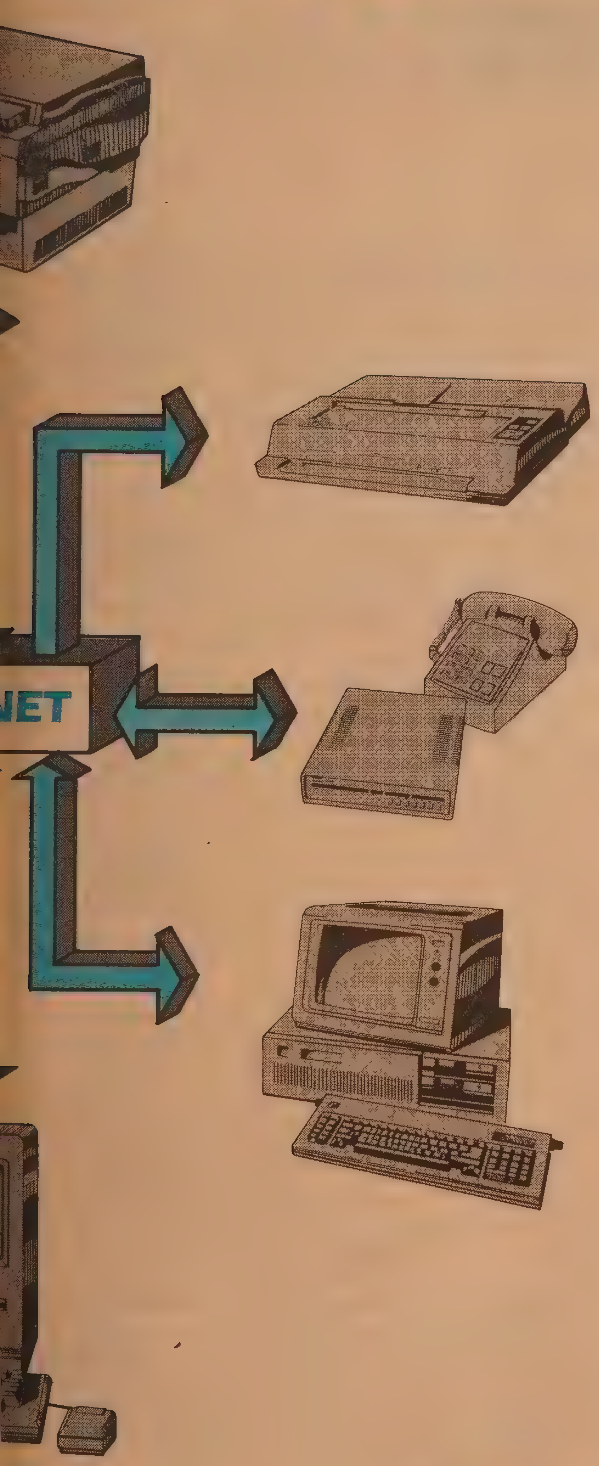


Automatic or Manually Controlled Pause Command

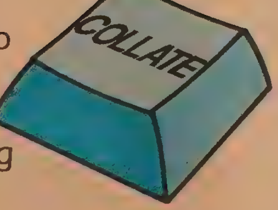
Change paper or vellum at any time as files are loaded into the DATA-NET.

Manufacturing & Mar

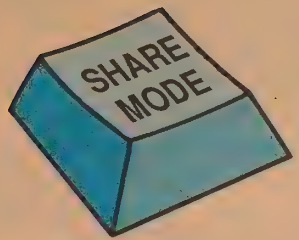
key moves
vorking



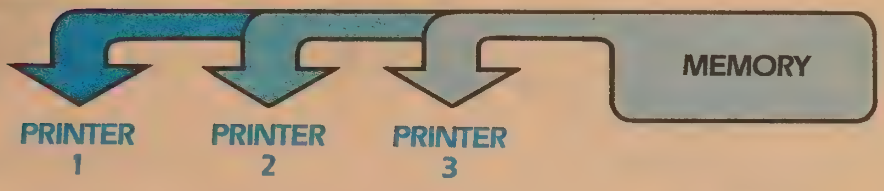
Copy or Collate
DATA-NET gives you up to 99 collated copies of any document — a lot easier and faster than just making copies.



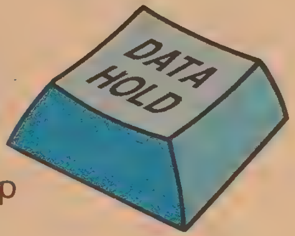
g of "Interface Tools"



Tandem printing option saves you down time and service contract costs. DATA-NET's proprietary program routes print data to the directed or next available printer.



DATA-NET Will Hold the Data You Send to Memory Until You're Ready to Print



Eliminate holding-up the printer with start-stop printing while you're still processing data.

DATA-NET gives you all the right connections for peripheral sharing.

Phone us now for immediate response — prices, ordering details, reference accounts, specifications:

800-537-5999

Integrated
Marketing
Corporation

INTERFACE TOOLS

See us at
COMDEX/Fall '87
November 2–6, 1987
Sahara Hotel
Las Vegas, Nevada

1031H East Duane Avenue, Sunnyvale, CA 94086
Telephone: (408) 730-1112
Telex: 5106018576 FAX: (408) 730-1452

Just The Fax

By Brock N. Meeks

When you talk about "communications" and PCs, the image of modems screeching their greetings comes instantly to mind. For many, however, those communications are not accomplished by modem, but by facsimile (fax) machines.

No longer the occupants of some dusty "utility" space, fax machines, like hard disks, have come out of the closet, only to be stuffed inside desktop PCs.

According to Scott McCready, senior market analyst with Cap International Inc., a Massachusetts-based market research firm, there are over 540,000 installed fax machines in the U.S. "Because fax machines are lighter, faster, and less expensive, people are moving them out of the mail room and into the office," McCready "And in growing numbers people are installing ing a fax in their desktop PC."

That "PC fax" McCready mentioned is the newest rage in computer add-ons: the PC-fax card. These cards emulate a fax and put its communications capability at your fingertips. Two years ago you couldn't find a PC-fax card; today there are six PC-fax card manufacturers.

The fax machines of a few years ago—unwieldy beasts, both expensive and slow—have romped into the information age, at 9,600-bps. Fax machines used to take up to six minutes to send a single page document; the fax of today can send that same document in about 15 seconds.

HOW DO YOU SPELL "SURVIVAL"?

For David Darrow the letters "f-a-x" spell survival.

Darrow is a freelance illustrator in a competitive pressure cooker that combines the glitz and glamour of Hollywood and the high tech triangle of Los Angeles county. Darrow claims the fax gives him an edge. "When getting the job done means being in two places at one time, and I mean that literally, the fax can't be beat," he said.

I watched Darrow as he scrambled to meet an important deadline. He was finishing up a series of sketches for a larger project: a poster for a new Steven Spielberg movie. He was running out of time. Moreover, he was at least an hour's drive from where he had to drop off the sketches. (If he makes this deadline, he can add "magician" to his resume, I said, thinking out loud.) "No sweat," he said, "I'll fax the drawings."

Darrow explained that he used to use a courier service when in a bind. That saved him driving time, so he didn't have to leave his studio, but the deadline was still in jeopardy as the courier still had to fight the infamous LA traffic.

"With the fax, these sketches go right from my studio to the art director's desk." This allows the art director to quickly mark up the drawings, Darrow said. "The art director will make some suggestions and note changes. When done, the marked-up drawings are sent right back to my fax. That process used to take all day, sometimes more," he said.

"Now I can get work approved much quicker. Using a fax is almost like being there in person. In fact, I can actually send and receive drawings to several people during the day without leaving my office."

Cap International's Scott McCready: "Because fax machines are lighter, faster, and less expensive, people are moving them out of the mail room and into the office. And in growing numbers people are installing a fax in their desktop PC."

FAX FOR THE MASSES

McCready notes that manufacturers contend their PC-fax systems are more cost effective than a standalone fax. (A PC-fax card costs around $1,000; the price tag for a standalone fax typically runs more than $2,000.) However, McCready points out that a standalone fax is a shared resource, unlike a PC-fax card. "An office manager, in today's market, faced with buying a single $2,000 fax or six $1,000 PC-fax cards is almost surely going to opt for the standalone (fax)," said McCready. But there's no denying it: a PC-based fax is tempting.

Typically these PC-fax cards come with a 9,600-bps modem and special software. The software is needed to convert ASCII files and graphics into the bit-mapped format that a fax machine uses. (These PC-fax cards can communicate with any other PC-fax card or standalone fax.) The 9,600-bps data transfer rate of these cards is possible because the files are compressed during transmission, and decompressed by the receiving machine. In addition, these new PC-fax cards are compatible with any fax machine —worldwide. (The fax industry, unlike the modem industry, has shown the foresight to make sure fax technology is standardized, worldwide.)

THE HUMAN INTERFACE

Analysts like McCready say that people feel more "natural" using a fax machine then PC-based telecommunications. Instead of dealing with binary file transfers and data bits, a fax sends *pages*. And instead of hassling with communications protocols and modem settings, a fax requires only the inserting of a single page and pushing a button.

Using a PC-fax card is even easier, because you don't have to bother with the intermediate steps of printing a document and carrying it to the nearest fax. With a card in your PC the entire process is handled from the keyboard.

Industry analysts believe fax transmissions will seriously compete with services such as electronic mail, overnight mail, and courier services. The main advantage of a fax is that transmission is immediate and complete—you slide in a piece of paper (or specify a file) and press a button.

In contrast, an electronic mail system requires that you know at least two sets of commands (one for the email system; one for your communications software), have your communications parameters set correctly, modem set up correctly, etc. And after all that, you still can't transmit graphics on an email system with any degree of certainty.

HYPE OR FAX?

Much hype has surrounded the emergence of these PC-fax cards. The low price and convenience certainly make these add-ons a tempting candidate for a slot in your PC. However, like any new device, the PC-fax card faces stiff opposition from the established marketplace.

As manufacturers of standalone fax machines shrink their products, both in size and price, the edge will undoubtedly go to them. Indeed, senior analyst McCready says that Cap International's forecast for the PC-fax market in 1990 is only 150,000 installed units. "It's awfully hard to forecast a market with no historical reference," he says. "But it's future is an open book."

PC-fax cards must continue to keep up with advances in graphics and telecommunications technologies, while maintaining a reputation for easy use. That accomplished, PC-fax products could become a highlight in the evolution of communications technology, instead of an obscure footnote on the time line of the information age.

Copyright ©1987 by Brock N. Meeks. Brock Meeks is a San Diego-based freelance writer and columnist for several publications. Those are the bare facts.

SOUTHLAND COMPUTER FAIRE AND CONFERENCE

BRING THIS AD
AND SAVE $2.00
OFF ADMISSION FEE
REGISTER TO WIN AN
IBM COMPUTER SYSTEM!!!

The most exciting computer event of the year
COMING TO THE

SANTA MONICA CIVIC AUDITORIUM

1855 Main Street, Santa Monica, CA 90401

For Vendor Information Call (213) 452-0165
For Seminar Information Call (213) 452-7936

November 27th 10 am to 8 pm
28th 10 am to 8 pm
29th 10 am to 5 pm

General Admission $6.00
3 Day Admission $11.00

Discounts to seniors, students, handicapped and children under 12

FEATURING:

- The newest in PC software and hardware.
- Over 30 hours of free seminars on graphics, word processing, spreadsheets, desktop publishing and more.
- Over 40 hours of professional development seminars — hands on training.
- Key note address by Dr. Larry Magid, Computer Columnist — LA Times.
- Special appearances by WordPerfect Corp., Ashton-Tate, Ventura Publisher, Borland Microsoft and more.
- Thousands of professional and beginning users and buyers in attendance.

another exciting event presented by

Promo Com, Inc.
3110 Main Street, Second Floor
Santa Monica, California 90405
(213) 452-0165 or (213) 452-7936

in association with
Computer Trading Post
Seminars Produced by
W. A. Yacco & Associates

CONFERENCE & SEMINAR SCHEDULE

FREE SEMINARS

CONFERENCE HALL 1

11:00am 12:00pm 1:00pm 2:00pm 3:00pm 4:00pm

	GRAPHICS I	GRAPHICS 2
FRIDAY, NOV 27th	Using paint programs to create graphics images INCLUDING: ■ PC Paint Brush ■ DR Halo ■ Halo DPE	Creating presentation graphics and their integration into desktop publishing documents INCLUDING: ■ Gem Draw Plus ■ Gem Graph ■ Gem Word Chart ■ Gem Desktop Publishing

11:00am 12:00pm 1:00pm 2:00pm 3:00pm 4:00pm

	SPREADSHEETS		
SATURDAY, NOV 28th	dBASE III Plus The number one full-powered database product	Lotus 1-2-3 Introduction to the most popular and widely used spread sheet applications	Microsoft ■ Excel for the PC

11:00am 12:00pm 1:00pm 2:00pm 3:00pm 4:00pm

	BORLAND				
SUNDAY, NOV 29th	Paradox The major database and new member of the family	Reflex Database and data analyst	Turbo BASIC Borland's hot version of the standard	Turbo C An affordable and full-featured version of C	Reserved for a New Announcement

CONFERENCE HALL 2

11:00am 12:30pm 1:30pm 2:30pm 4:00pm

	WORD PROCESSING			
FRIDAY, NOV 27th	WordPerfect Corp. INCLUDING ■ WordPerfect ■ PlanPerfect ■ Library ■ Executive	Microsoft		
		Windows 386 The interim solution for '386 micros	Works for the PC Hot new integrated package	Word 4.0 Faster and more powerful than ever

11:00am 12:30pm 1:30pm 2:30pm 4:00pm

	DESKTOP PUBLISHING SOFTWARE		
SATURDAY, NOV 28th	Xerox Ventura Publisher Edition Full featured desktop publishing for the PC	Aldus PageMaker The original DTP. Now for the IBM PC	Ashton-Tate • Byline

11:00am 12:30pm 1:30pm 2:30pm 4:00pm

	DESKTOP PUBLISHING HARDWARE			
SUNDAY, NOV 29th	How to configure a major DTP System INCLUDING ■ The AST Desktop Publishing System	How to use a multisync monitor for hi-resolution DTP applications INCLUDING ■ CTX	Using scanners to input text and graphics into DTP applications	Laser Printers How to combine fonts, images and other graphics components using a laser printer to produce DTP documents

For further information call (213) 452-7936

This schedule is subject to change.

PROFESSIONAL DEVELOPMENT SEMINARS

Pre-registration required to assure placement

$ 65.00 — one seminar
$ 85.00 — at the door
$ 55.00 — each additional seminar
$275.00 — any 6 seminars

CONFERENCE HALL 3

	10:00am 2:00pm	2:30pm 6:30pm
FRIDAY NOV 27th	How to Build Your Own AT	Maintaining the PC
SATURDAY NOV 28th	Advanced Word	Xerox Ventura Publisher
SUNDAY NOV 29th	Advanced Lotus 1-2-3	dBASE Programming

CONFERENCE HALL 4

	10:00am 2:00pm	2:30pm 6:30pm
FRIDAY NOV 27th	Introduction to the IBM PC (DOS)	Advanced PC (Hard Disks)
SATURDAY NOV 28th	Advanced WordPerfect	Pagemaker
SUNDAY NOV 29th	Introduction to the PC (DOS)	Advanced PC (Hard Disks)

10:00 - 10:45am — Keynote Speaker
Dr. Larry Magid, LA Times Computer Columnist will speak on the products introduced at Comdex and trends and new products to look for in 1988.
10:15 each day in Conference Hall 1

- For the Beginner — Consumer Support
  — What to look for — What questions to ask — Need evaluation
- Independent consultants available throughout the show for individualized support.

PLUS: Door prizes each hour throughout the show.

Private and Group Training available on most software packages **anytime.**

Introduction To Networking With UUCP

By Bennett Falk

The people who can most readily understand the benefits of multi-user, multi-tasking systems are the people who need to exchange information with other computer users over phone lines. Once a single-user computer makes a connection over the phone, it is no more powerful than the equipment it's attached to. You can waste a lot of time watching your computer receive packets of information at 120 characters per second or waiting for an overworked bulletin board to give you its password prompt.

Most versions of the UNIX operating system include a group of utilities that addresses this problem nicely. This family of programs is known collectively as UUCP: the UNIX to UNIX copy programs.

> Most UNIX computers have serial ports built in and can be included in UUCP networks for no more than the cost of a cable and modem. While it may not be on the cutting edge of network technology, UUCP is a cheap and readily accessible tool for building computer networks.

UUCP manages communications between UNIX computers, and though the name "uucp" technically refers to a file transfer program, the collected UUCP utilities also co-ordinate requests for remote program execution and for the exchange of electronic mail. UUCP basically allows UNIX system administrators to build a network in which resources from a number of UNIX machines are accessible to users of any participant computer.

UUCP networks are "batch" oriented: they operate by putting work requests in a queue. The work gets done more or less behind the user's back. Your job probably won't be done instantaneously, but at least you won't be prevented from doing other things while your request is executing. The "store and forward" nature of UUCP networks makes them awkward in comparison to "interactive" networking tools, like Sun's Network File System (NFS).

In addition UUCP networks usually use serial ports to connect machines, and consequently they are slow by comparison with other networks that require special hardware. Fortunately most UNIX computers have serial ports built into them and can be included in UUCP networks for no more than the cost of a cable and modem. While it may not be on the cutting edge of network technology, UUCP is a cheap and readily accessible tool for building computer networks.

How Does It Work?

One of the endearing features of network building with UUCP is that the computer network is, in large measure, dependent on the network of people who administer UNIX computers. Before a UUCP connection can be made between two machines, the administrators on both machines must have agreed on some basics: what login names and passwords calling machines will use, what the system names of the machines being connected are, what directory access and privileges to each machine, and who may call whom at what time of day. Once these things have been worked out between the humans involved, the computer operations are relatively straightforward.

Whenever one machine calls or "polls" another, it "logs in" in much the same way that conventional users do. The polling machine uses a port that could also be used by a human user for an interactive session, and it must have a valid login account and password to gain access to the machine being called. Most UNIX systems include a generic user account named "uucp" that can be used for this purpose, but it is generally a good idea for each machine that calls a site to have its own login account on that computer.

Once past the login procedure, both computers in a UUCP connection run a program named "uucico." On the polling machine, uucico is the program executed to place the call in the first place. On the machine receiving the call, uucico is the default shell for UUCP login accounts and is run as soon as the polling machine has successfully logged in.

> Using UUCP can be as simple as using UNIX mail. All you need to know is the login name of the person you want to send mail to and a pathway from your computer to the machine on which that person logs in.

Once these two uucico processes have connected, they exchange system names as an additional level of protection before getting down to business. In modern versions of UNIX, utilities exist for the system administrator to set the system name (or node name) with relatively little effort. In earlier versions of UNIX, the system name could be changed only by recompiling the UNIX kernel and re-booting the system.

In general, after a successful login the calling machine will send any requests that have been queued up for the machine being polled. Any files that are needed to complete a job are transferred to the machine on which the job is to be executed.

Once the caller's jobs are finished, the requests for the calling machine that have been queued on the passive site will be transferred to the caller and executed. When requests from both machines have been exhausted, the uucico processes exchange exit codes and hang up.

But How Do People Use It?

Once everything has been set up, actually using UUCP can be as simple as using UNIX mail. All the user needs to know is the login name of the person you want to send mail to and a pathway from your computer to the machine on which that person logs in. You put all these things together in a single command that looks like this:

```
mail ebmudd!hapless
```

This will send electronic mail to a user named "hapless" on a machine named "ebmudd." (If you're working with the C-shell, you will need to modify the command slightly because "!" has a special meaning to that shell. The C-shell version looks like this:

```
mail ebmudd \ !hapless
```

The " \ " is used to tell the shell to interpret the next character literally.)

All UUCP commands use the "machine!name" format to address files, programs and users on other machines.

Copyright ©1987 by Bennett Falk. Bennett Falk lives in the Bay Area and works for Sybase, Inc. He writes whenever he can and hopes for the best.

This is IIT!

There's Never Been a Better Time to Buy a Computer

AT 386 Compatible

- 16 MHz No Wait State
- 16 MHz 80386 CPU
- AT Sliding Case
- 1 MB Ram on Board (static ram)
- 1.2 MB Floppy Drive
- 200 Watt Power Supply
- FDD/HDD Controller
- Monochrome Graphic Printer Port
- TTL Hi-Res Monitor
- Assembled & Fully Tested

$2390

8088-2 Portable

$849

- 8088-2 Turbo Motherboard
- 4.77/8 MHz
- 640K Memory on Motherboard
- Two 360K Floppy Drives
- Floppy Drive Controller
- 150 Watt Power Supply
- Clock/Calendar
- Serial/Parallel/ Game Port
- Monitor
- Keyboard

XT Turbo

- 8088-2 (4.77/8 MHz) Motherboard w/legal BIOS
- 640K Memory
- Floppy Disk Controller
- Two 360K Floppy Drives
- Clock/Calendar/Serial/ Parallel/Game Port
- Monitor Controller/ Printer Port
- Monitor w/Swivel Stand
- XT/AT Switching Keyboard
- 150 Watt Power Supply
- Slide-In Case

$649

AT-EGA Turbo

$1777

- 6/10 MHz 80286 CPU
- Software Switchable
- 1 MB RAM on Board
- 1.2 Meg Floppy Drive
- One 360K Floppy Drive
- 20 MB Hard Disk
- EGA Card
- EGA Monitor
- 200 Watt Power Supply
- FDD/HDD Controller
- Phoenix or DTK BIOS
- AT 5161 Keyboard

ONE YEAR WARRANTY ON SYSTEMS, PARTS & LABOR

WE ARE NOW OFFERING NETWORK SERVICE

MONITORS

NEC Multisync, EGA	$535
Packard Bell Monochrome Amber	$ 79
Samsung EGA	$359
Samsung RGB	$259
Casper	$269

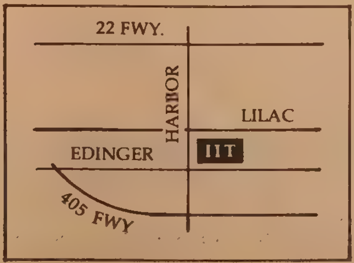
Multi I/O Card (5 Functions)	$ 55
1200 Baud Internal Modem	$ 95
Fujitsu 360K 5¼" Drive	$ 74
Brother M1509 132 Col., 160 Cps	$379
MS DOS 3.2	$ 75

SEAGATE HARD DRIVES

ST 225 w/WD Controller	$299
ST 4038 Bare Drive	$495
ST 238 w/Controller	$309
ST 251 Bare Drive	$475
80 MB Hard Drive	$850

IIT COMPUTER

16040 Harbor Blvd., Suite M
Fountain Valley, CA 92708



(714) 775-8126
(714) 836-5534
Sales • Service • Repair
We Accept MC/Visa & Mailorder

DEALERS: Call for quantity pricing. Prices subject to change without notice.

The "mail" command given above assumes that the sender's machine calls ebmudd directly, and this isn't always the case. Electronic mail can be routed through a number of machines. For example, hapless, whose account is on ebmudd, might send something like the following:

```
mail pluto!mars!saturn!jupiter!fred
```

Here, Fred has an account on the computer named jupiter. Hapless' computer ebmudd doesn't have a direct connection to jupiter, but it does call pluto, which calls mars, which calls saturn, which calls jupiter. Hapless' mail to Fred will be transferred from machine to machine until it reaches its destination. How quickly the mail moves from ebmudd to jupiter will depend on how often these machines call each other.

This exchange of mail will use cpu time and disk space on all the machines the mail passes through, but the intervening machines (pluto, mars, and saturn) don't need to know anything about either Hapless or Fred to pass their mail along.

In addition to electronic mail, it is also possible to use "uucp" to request file transfers between machines and "uux" to request remote execution of programs. The syntax of these commands is largely the same as that for mail:

```
uucp remote\!\~/filename !~
```

This command copies a file from mars to my local machine. Note that this file transfer requires a publicly accessible directory on both machines. By convention UUCP has used /usr/spool/uucppublic. Once the file transfer is completed, the recipient is responsible for moving the file out of the public directory.

A request for remote execution looks like this:

```
uux remote\!lpr < file
```

This command will queue the file named "file" for printing on the machine named "remote." This kind of command is particularly useful as a way of making scarce resources available to a larger group of users. (The above command would enable several UNIX computers to share a single laser printer.) Remote execution of programs is a powerful feature that is by default restricted to only a few commands. It's wise to check with the system administrator in advance before experimenting with remote execution.

Hints For Using UUCP

While using UUCP is not very hard, it is certainly not user friendly in the modern sense of the term.

The single biggest obstacle to using UUCP effectively is having to piece together the names of the machines through which your mail will be routed. You can always find out which maines your computer calls with the "uuname" command. Just typing "uuname" will display a list of the UUCP connections your current machine has. If for any reason you're unclear about the node name of your current machine, "uuname -l" will display it.

Finding connections beyond the computers you can address directly will be primarily a trial and error process. You can shorten this process a little by paying attention to the routing of any mail you receive from other sites. If you get enthused with piecing together UUCP pathways, you should read the "comp.mail.maps" newsgroup on USENET and take advantage of the "pathalias" utility.

Another problem area for many users is tracking the status of UUCP requests. In some circumstances, undeliverable mail will be returned to the sender. The status of any request for remote execution of a program will be returned (by e-mail) to the user who requested the job.

Apart from these reports, the best hope for tracking what has happened to your UUCP requests is to monitor the connections between your system and the computers it calls directly. UUCP provides the uulog utility (and in some versions another program named uustat) for just this purpose. You can display the log of your system's contacts with another system with "uulog":

```
uulog -s pluto
```

This command would print the time and result of recent calls to pluto. The information returned by uulog is straight from the log files maintained by uucico. The log files are generally kept in /usr/spool/uucp or one of its subdirectories. The exact location will depend on which version of UUCP is installed at your site. uulog will work regardless of the log files' location.

In recent versions of UUCP (the Honey-DanBer or HDB version distributed by AT&T), "uustat" will provide not only human readable reports of UUCP activity but some control over jobs already queued as well. Check the manual entry for uustat at your site for details.

UUCP networks rely on the willingness of computer sites to receive, store and forward jobs destined for other machines. As already noted, providing this service uses cpu and disk resources which may be in short supply. If you're going to use UUCP, be careful not to make excessive demands on the machines your work passes through. Good computer citizenship is especially important for UUCP users: not only does it promote good will, it also results in a more responsive network. ☐

Specialists in Business Management Services

PRESENTING
EQUITY I
POWERFULLY PRODUCTIVE. EQUITABLY PRICED.

Epson® Equity I's three configurations let you build a system that performs at a price you can afford

- For home use or as a second office computer choose the single 360KB floppy disk drive and an optional monochrome monitor
- For business use select the dual 360KB floppy disk drive system and either the optional 12" color monochrome monitor or the 13" RGB color monitor
- Or move up to the high-end system consisting of a single 360KB floppy disk drive 20MB internal hard disk and an optional 13" color monitor

And when it comes time to hard copy your hard work choose one of Epson's outstanding printers or color plotter. At prices like these isn't it time you put Equity in your home or business?

EPSON

$699 Complete System

EQUITY III+
PERSONAL COMPUTER

Specifications
CPU: 80286 microprocessor, 6MHz, 8MHz, 10MHz selectable clock speeds: real address (8086 compatible) and protected virtual address (multi-tasking or multi-user) modes 24-bit address & 16-bit data bus

From $CALL!

TURBO XT ADAPTOR $79

Prices subject to stock on hand

CAD/CAM &
DESKTOP PUBLISHING
Complete Systems Available now!!

Accounting Services
and Consulting
Please Call

LIMITED TIME ONLY
MICROSOFT WORD $225.

VIDEO STORE SOFTWARE From $CALL!
BUSINESS ACCOUNTING SOFTWARE
From $69
DENTAL MANAGEMENT SOFTWARE
From $1995
MEDICAL MANAGEMENT SOFTWARE
From $2495
PROPERTY MANAGEMENT
SOFTWARE
From $995

WE SELL QUALITY PRODUCTS & SERVICE
AT COMPETITIVE PRICES—CALL TODAY!

EPSON GQ-3500

8.2"
15.9"

LASER PRINTER

Epson FX-85 $307.

DOT-MATRIX PRINTERS

Printers	Suggested Retail	Special Price
LX86	$299	CALL
FX86e	$499	CALL
FX286e	$699	CALL
EX800	$599	CALL
EX1000	$799	CALL
LQ800	$699	CALL
LQ1000	$999	CALL
LQ2500	$1399	CALL

InfoSoft
100 W. FOOTHILL BLVD. SUITE 205
SAN DIMAS, CA 91773
CALL 714 592-5561 or 5562

Butcher—
The Other Graphics Package Everyone Needs

By Matthew Leeds

This month I want to rave about a product that has brought the fun back into using my Amiga, the kind of excitement I felt when I first started using *Deluxe Paint*. I'm sure most of you know what I'm talking about—the rush you felt when you realized the amount of power at your fingertips, the control over the creative process, and the sheer expanse of options that suddenly opened up in front of you. A program that opened the real power of the Amiga as a color graphics tool.

What I'm talking about is a small, obscure program from an almost unknown software publisher: *Butcher* from Eagle Tree Software. *Butcher* is the other program you must have if you're going to work in color graphics on the Amiga. You can spend hours exploring its capabilities, or get down to doing useful work in minutes.

Eagle Tree describes *Butcher* as a graphics conversion and processing program designed to complement digitizers and paint programs. It is not used to create graphics from scratch, but rather to work on existing files. It fills almost all the gaps left by *Deluxe Paint* and a few other graphics programs.

Have you ever been working on a picture and needed just one more color, but couldn't find a way to free a color register? *Butcher* can easily solve this problem. You can use it to get a histogram of color register usage, in sorted order. Just select the least-used color and merge its pixels into another color. This will free up a register.

How about the last time you digitized an image? Not satisfied with the sharpness of the image? You can use *Butcher* to subtly add darker edges to the transitions between tones in the image, automatically. Or to shift the selection of colors in the image to enhance the contrast, after you've saved it as an IFF file from your digitizer.

Looking for some new special effects to add to your repertoire? How about transforming your image into a mosaic pattern of your choice? Or creating an edge mapped silhouette in full color? Or perhaps selectively dropping bit planes from your image to create half-tone effects?

Now you begin to get some idea of what you can do with *Butcher*. Naturally *Butcher* supports 320 or 640 mode, with or without interlace, overscan, and super bit map images. It also supports color cycling (four ranges in either direction) and will convert HAM images to low-res and low-res to HAM.

I've barely touched on the full range of *Butcher's* capabilities here. This program is far better than any game—you could spend weeks playing around just getting ideas for new image manipulations or special effects. If you have any interest at all in graphics on the Amiga, you have to purchase a copy of this program. The best part of all, however, is the price. It lists for $37 and I've seen it discounted below $30 locally. Be sure to get version 2.0.

> **Leisure Suit Larry is a retrograde romp through a misanthrope's view of the singles scene, supposed to test your street smarts and suave sophistication. I'm all in favor of any computer simulation that attempts to bring some element of human interaction into play, but not at the expense of half of the human race.**

SOFTWARE NEWS

For those of you who like to follow the news in the Amiga development community you may be interested to know that Epyx has hired several Amiga alumni. This brings to three the number of Amiga-ites at Epyx: David Morse, Epyx's chairman and CEO, David Needle, system designer for the Amiga and R.J. Mical, father of the Amiga's Intuition operating system. The key to all this is that the press release announcing the arrival of Needle and Mical said they were hired to lead Epyx's work on non-software products.

Does this mean that Epyx will be creating a new line of personal computers? Will they be working on a CD-ROM appliance as the keystone to a new line of home entertainment and educational products? Will we see an evolutionary jump in the quality of coin operated arcade games? Your guess is as good as mine, but one thing is certain—Epyx has been hiring some great talent in the last six months and I look for some amazing products to come out next year.

Tapping what is either a new low in the art form of parody computer games or an undue influence of John Waters movies, Electronic Arts, in affiliation with Sierra On-Line, is releasing *Leisure Suit Larry In The Land Of The Lounge Lizards*. Described as a humorous endeavor for adults, it is set in the fictional town of Lost Wages. In one adventurous evening your objective is to overcome your nerdiness and seduce the woman of your dreams. Larry suffers from "bad looks, bad breath, and lack of money." This retrograde romp through a misanthrope's view of the singles scene is supposed to test your street smarts and suave sophistication.

Don't get me wrong. I'm all in favor of any computer simulation that attempts to bring some element of human interaction into play, but not at the expense of half of the human race. A few developers have raised their heads above their keyboards long enough to see that there have been changes in the social consciousness and that they should be reflected in their products. But you won't find them here. Yeah, I know, this is supposed to be a parody, but it still leaves a foul taste in my mouth. It's on par with a movie like *Revenge of the Nerds;* simple-minded and single-tracked. Come on gang, we all deserve better.

About the time this column comes out I will have just finished a marathon ten days at two computer shows: The Commodore Show in southern California and the AmiEXPO in New York. I will be covering both events in my next column and will be bringing you news of new products, new developments, new trends, and additional miles on my frequent flyer program.

Sometime in the next few months I'll bring you an in-depth look at *WordPerfect* for the Amiga. I've received a review copy, and rather than just give an overview I'd rather wait a while, use the program on a regular basis, and then tell you what I think. One first impression, you'll want to run this program from a hard disk, it takes up three disks; not for the faint of heart. ☐

Matthew Leeds has been involved in the high tech field since he blew up his bedroom playing with a children's chemistry kit. He has been using Commodore computers since 1982 and has a strong interest in photography, video, graphics and related fields. He currently works for Infinity Software.

ATARI ST

Megas Arrive, Applications Don't

By Helmi Kobler

We all knew Atari's new Megas would come sooner or later. It turned out to be later, but they have finally arrived. Retailers in my area all received their shipments of Mega4s within the same week and have begun moving them out the door. My impressions of the ST community's reaction is that the Mega4 is generating the most enthusiasm — probably because of its massive four megabytes of RAM. No other PC offers that enormous amount of RAM in a standard configuration, and besides, it's a good excuse to compare a Mega to puny one-meg Macs or PCs — something all ST users love to do.

I have reservations about the Mega4, though. Most prominent among them is the machine's retail price of $2399 and $2599 for a monochrome and color configuration, respectively. These prices put the Mega4, which is being positioned mainly as a machine for the professional and business user, in the same price range as a Mac SE, IBM's PS/2 model 30 or a fast 286 MS-DOS clone. $2599, in fact, puts the Mega4 dangerously close to some non-configured 32-bit 80386 machines (sans hard drive and monitor), which can outperform it in every conceivable situation.

Also, it's still regrettably true that there's a serious lack of business and professional applications software for the Atari machines. Despite the ST's progress in developing advanced applications in word processing, desktop publishing, CAD and spreadsheets, there's a far wider range of such software in both the Mac and PC worlds. A machine's functionality is not defined exclusively by its RAM — software counts, and the Mega4's four megs don't change the fact that the Mac and PC run better software.

It's also being argued that the Mega's technology is behind the times. Aside from its blitter chip, the Mega offers no real performance enhancements over the original STs of two years ago. At the 520's introduction, 640x200 resolution graphics in four colors was respectable, a 640x400 monochrome resolution was exceptional, and the 520's 8 MHz cpu was considered fast. Now, though, many 286 PCs are speeding along at 12 MHz, and the newer 32-bit machines fly at 16 MHz. And graphics standards have definitely improved — consider IBM's MCGA and VGA standards in its PS/2 line. So the rest of the PC world has advanced, while Atari's brand new Mega machines have not improved much on their two year old technology.

Unless the machines are significantly discounted — which Atari is discouraging dealers from doing — the Mega4 faces an uncertain future competing against the other machines in its price range.

MARBLE MADNESS

If you loved the Amiga or arcade versions of *Marble Madness*, you're in for disappointment with the ST version.

> ***Empire* claims to be the "Wargame Of The Century," and as far as the ST world's concerned, I believe it is.**

If you ask me, the two megabyte Mega2 is Atari's machine with the potential. The Mega line does have some respectable qualities: a blitter chip to speed up some graphics operations, a 68000 bus to allow for expansion, a sleek, space efficient design and a detachable keyboard with a solid feel. I certainly wish my own 520 had those enhancements.

The Mega2's two-megabyte RAM is enough for typical office and personal applications (and will be for some time, I think). And though the Mega2's price is still a little high at $1699 and $1899 for mono and color configurations, respectively, if prices fall a few hundred dollars, the Mega2 will sell to small businesses and individuals looking for a competent but relatively inexpensive computer.

Software News

On the new software front, Electronic Arts has finally released its ST version of *Marble Madness* ($34.95), that fantastic arcade game where the player guides his marble through a series of perilous, surrealistic mazes. EA has published several versions of the game for the Commodore 64, Apple II and IBM PC, but the original Amiga version was really the only one that did the arcade game any justice. I was hoping the ST version might be as successful a translation, but it didn't happen.

For one thing, none of the arcade game's nuances were incorporated in the ST version. Marbles don't appear to spin. They don't dissolve in acid, they don't crumble when they crash to a maze floor, they aren't sucked up into vacuums. Instead, the game uses a generic effect when you lose your marble — it just sort of disappears into the Twilight Zone.

Sound effects could be much more advanced. The game is full of monotone "doinks," and the original game's jazzy musical score is dull in the ST version. Controlling your marble with a mouse is awkward and frustrating, while using a joystick makes navigating the mazes too easy. And whoever designed the ST version of the game must not have had a strong understanding of Newton's laws of gravity. My marble seemed to climb sheer walls in a few cases, while riding the rim of trenches for long distances.

Of course, Amiga users might be eager to point out that the game's shortcomings are the result of the ST's lack of graphics and sound capabilities. I can't believe this for a second. The game's problems seem to be more of a result of a rushed and poorly planned programming job.

If you liked the original *Marble Madness*, the ST version will disappoint you. If you never liked the original, you're liable to have a violent reaction to this version.

My low opinion of *Marble Madness* was reinforced when I tried out *Empire* ($49.95) from Electronic Arts' Affiliated Labels division. The game, developed by a small company Interstel, claims to be the "Wargame Of The Century," and as far as the ST world's concerned, I believe it is. The name of the game is empire-building: you explore an unchartered planet, subduing the hostile cities you encounter and forcing them to produce war materials such as armies, fighters or a number of ships. The more cities you conquer, the more materials you can produce. And the more war materials you can produce, the more cities you can conquer. It's simple! Eventually, your empire will run into someone else's (either the computer's or a human opponent's) and then it's all-out war where you must mobilize your troops, ships and fighters to invade the enemy.

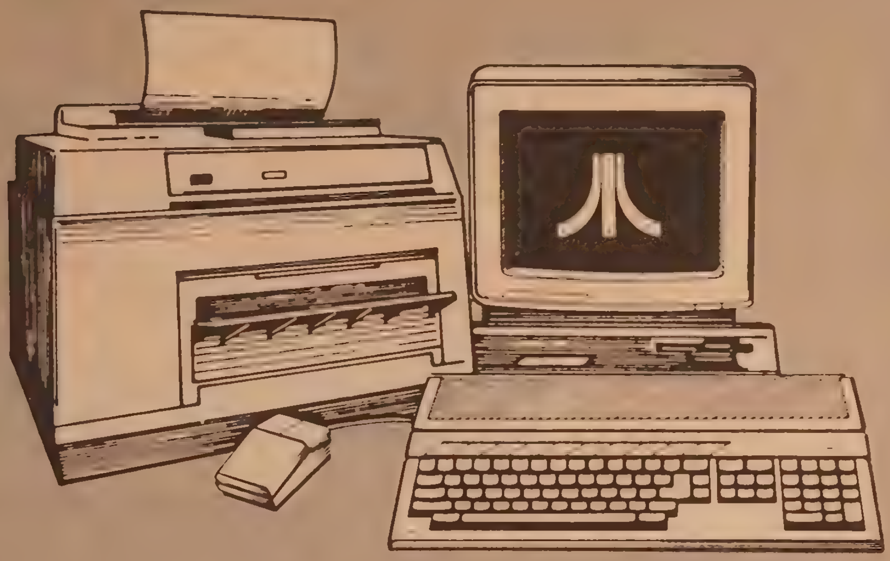
Empire is extremely involved. As Commander, you're faced with a number of decisions such as what materials to produce in conquered cities, where to employ them, which empire to fight and which to leave alone, where to set up shipping lanes, etc. The only problem with *Empire* is that games can take several hours to complete. The game's box and 72 page manual warn that "This program is highly addictive. Considerable otherwise productive time might be lost. Play only during vacations." I thought Interstel was only trying to be cute. They're dead serious. ☐

Helmi Kobler took his first step into the computer world in 1983 when he walked out of Macy's with an Atari 800 in his arms. Still an Atari user, he's now inseparably attached to his ST. He can be reached through MicroTimes or e-mail <helmi> on The WELL at (415) 332-6106.

DESKTOP PUBLISHING

for less than $3,000 on the NEW

ATARI MEGA



- ☐ CAD
- ☐ WORD PROCESSING
- ☐ SPREADSHEETS
- ☐ BUSINESS
- ☐ DATA MANAGEMENT
- ☐ EDUCATIONAL
- ☐ GRAPHICS DESIGN
- ☐ TELECOMMUNICATIONS
- ☐ PROFESSIONAL MIDI SEQUENCING

The Mega ST Line is the most powerful computer system sold in 1, 2 & 4 Megabyte configurations. This series features a small footprint, detachable keyboard, battery backed clock, expansion bus, and a graphics co-processor which increases the speed of graphics generation.

The Mega ST, combined with the new 300 dot per inch laser printer, which costs HALF the price of comparable units, takes ATARI into the desktop publishing business.

☐ ***VERTICAL MARKET SOFTWARE AVAILABLE FOR ALL ST PRODUCTS:***
Inventory Control, Retail Stores, IBM Emulation.

WE ALSO SUPPORT 8-BIT ATARIS

300/1200 Baud Modem

runs 8-bit/ST, RS 232
Ideal for IBM Also.

$99

80 Column Interface

for 8-bit Ataris

$79.95

FREE!

Atari calculator
with purchase of
any complete system

1040 ST	Color System	**$1049**
1040 ST	Mono System	**$849**
520 ST	Color System	**$849**
520 ST	Mono System	**$649**

COMPUTER CLASSES

SIGN UP NOW!!

Word Processing, Data Management, Etc.
We give PERSONAL ATTENTION TO YOU
Great for New Users

LARGEST SELECTION OF ATARI PRODUCTS IN SOUTHERN CALIFORNIA

MID-CITIES COMP/SOFT

"YOU'LL LIKE OUR FRIENDLY SERVICE"

9406 Flower St., Bellflower, CA 90706
(213) 867-0626 (213) 867-8994

Store Hours: Mon-Fri 10 a.m. to 7 p.m.
Sat 10 a.m. to 6 p.m.
Closed on Sundays

VISA

LAKEWOOD
BLVD.
CLARK
FLOWER
BELLFLOWER
N
91 FWY

Authorized Atari Dealer & Service Center

APPLE II

AppleFest Report

By Mike Markowitz

> *"...You can never tell the dancer from the dance, And you can never part the singer from the song; We've come so far together, This must be where we belong...."*
>
> **– From Apple's Tenth Anniversary theme song**

The AppleFest show in San Francisco (September 18–20) coincided with the first anniversary of the Apple IIGS. This was the first trade show in three years devoted entirely to the world of Apple II computing. The show was generally well-organized, although the solid row of Macintoshes in the press room offended some true believers....

John Sculley, Apple's chief executive, announced at a banquet for developers that IIGS production has passed the 200,000 mark, and sales now exceed the IIe and IIc *combined*. In fact, the IIGS is outselling any of the three Macintosh models. In a nose-to-nose competition with IBM, for a large order from the Indianapolis public schools, the IIGS beat out the new PS/2 model 25. The GS has been a sleeper, but it's beginning to wake up. Apple is beginning to put some promotional muscle behind the machine, including TV advertising. Nearly 100 software packages that take advantage of the GS' sound and graphics have been shipped, with at least 30 more expected by Christmas. Over 90% of the buyers are getting machines with an RGB monitor and 512K of RAM, or more.

Apple has announced a free ROM upgrade and replacement of the (sometimes) flaky Video Graphics Chip for IIGS owners. At this writing, however, a spot check of Southern California Apple dealers failed to locate any who had the parts yet.

I asked Del Yocam, Apple's Executive VP, why we've had to wait so long for a true Apple laptop, when all our MS-DOS friends are running around with cute little Toshibas, NEC Multispeeds and Datavue Sparks. He said the market just wasn't ready yet, and that quite a few prototypes had never made it out of the lab.

Strategically, the most significant new IIGS product released at AppleFest was Apple's new System Disk (v. 3.1), which, at last, gives us a true Finder, elegantly programmed by Dan Oliver and Cheryl Ewy. ("Finder" is the Macintosh name for the icon-based, mouse-driven windowing environment that lets the user open, close, move, copy and organize files by pointing and clicking). The new system disk, like most IIGS software, is excruciatingly slow to load. This is a powerful argument for putting the whole thing in ROM someday, like the Atari 1040 ST operating system....

Apple also released a new GS Icon Editor for software developers, making it easy to create customized symbols for applications and files. Developers are finally starting to receive the professional tools—compilers, translators and utilities—needed to write affordable high-performance software for the IIGS.

In the hardware arena, the hit of the show was the PC Transporter, from Applied Engineering. Code-named "Little Blue" during its prolonged gestation period, this electronic marvel snaps a complete PC-XT clone into almost any slot of your Apple II+, IIe or IIGS. It uses a V-30 microprocessor, humming along at 7.16 MHz. It's socketed for an 8087-2 math coprocessor and 768K of RAM. The card costs almost as much as a no-name PC clone ($400–$600 depending on how much RAM you want), but it cleverly uses most of your existing peripherals. Apple 3.5" drives, for example, can be used to format 720K MS-DOS disks, and your ImageWriter will work like an IBM Graphics Printer. We'll review it here as soon as we get one (promised to ship in November).

Another notable bit of hardware was the Zip Chip, developed by Dr. Frederick Peace. This $130 replacement for the 6502 or 65C02 microprocessor runs at 4 MHz with its on-chip cache memory. Most Apple II programs get a 360% speed boost. A IIGS version (replacing the 65C816) is reportedly under development.

I asked one Apple techie guru how fast the IIGS microprocessor could run (its present speed of 2.8 MHz makes for some agonizing delays when opening or closing applications). He said 6 MHz was no problem, and test articles had run as high as 8MHz. Plenty of scope for enterprising turbochargers....

WordPerfect is almost ready to ship version 2.0 for the Apple IIGS (see our review of version 1.0 in the September issue of MicroTimes). The new version includes pull-down menus and mouse scrolling, a great improvement.

There is still a surprising amount of life left in the IIe and IIc, as developers begin to break out of the 64K straitjacket of compatibility with the old Apple II+. *Springboard Publisher* is an astonishing example of what can be done under ProDOS in 128K. This is a poor-man's *PageMaker*, with integrated word processing, graphics and page layout. You can see a rough version of an entire page before printing it (text blocks are shown as ruled lines and graphics blocks are dark rectangles). A laser printer driver, a disk of style sheets and three disks of clip art will be sold separately. Springboard was showing a late beta-test version, since the package was not ready to ship at showtime.

Beagle Brothers weighed in with a spectacular new array of *AppleWorks 2.0* enhancements, the TIMEOUT series, including a set of desk accessories, spell checker, sideways spreadsheet printer, graph maker and macro utility. Priced at $50 to $90 each, these may be beyond the reach of struggling *AppleWorkers*.

There were a lot of new games on display from the heavyweight publishers (Activision, Mindscape, Brøderbund, Electronic Arts), but not many new ideas. Even more discouraging was the dearth of fresh thinking in educational software, which has always been Apple's strongest suit. We'll just have to wait for Apple's rumored CD-ROM product, perhaps some time next year....

Meanwhile, Apple's Classroom of Tomorrow (ACOT), a demonstration project in many diverse public schools, is showing what good teachers can accomplish in a "computer-saturated" environment. Each teacher and each student in the program receives a computer at school and another for use at home. Apple brought some of the kids from Memphis to the show. It was the first time some of them had ever traveled on a plane....

But that's another story.... ☐

Mike Markowitz is a computer engineer for a large Southern California aerospace firm. He has been writing about Apple II hardware and software since 1984. Copyright © 1987 by Mike Markowitz.

IBM PC/XT/AT COMPATIBLES

RUNS: PC-DOS, MS-DOS, UNIX, XENIX, LOTUS 1-2-3, SYMPHONY WORK, AUTO-CAD, PCAD, NETWORK-DLINK, MULTI-LINK, NOVELL

COMPLETE XT TURBO MONOCHROME SYSTEM

- Norton (Si—3.3.)
- AT JR CASE with 3 LED & RESET.
- 4.77/10 MHZ 0 WAITE STATE
- 640K Install
- Multi I/O (J Function)
- 2-360K Flopp Drives (Japan)
- TTL Monochrone with Swivel
- Mochrome Graphic with/Printer
- XT/AT Switching Key Board
- Tull Assembly Tested

MONOCHROME	**$585.00**
COLOR:	**$755.00**

PC/XT TURBO BARE BONES SYSTEMS

$169.00

- 4.77/10 MHZ Motherboard w/bias. 150W Power Supply
- Slide-in Case w/LED Indication
- Full Tested and Burned in
- FCC Approved Class B.

MADE IN USA

SPECIALS:

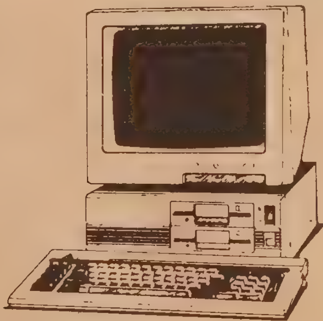
• 20MB Segate 225 w/c	$285.00
• 30MB Segate 238 w/c	$320.00
• EGA Card 256	$120.00
• Mono Monitor Sam Sung with base	$83.00

QST COMPUTER CORPORATION

18582 Beach Blvd., Suite 8B
Huntington Beach, CA 92648
(714) 964-1108
(714) 964-4438 (TECHNICAL)

COMPLETE AT TURBO

- 6/10 MHZ 80286 CPU 0 Waite State
- Norton (SI - 11.5)
- Software Switchable
- 1MB. RAM on Board.
- 1-2 MEG Floppy Drive
- 1-360K Floppy Drive
- 20 MB Hard Disk.
- 200 Watt P/S
- FDD/HDD Controller
- Monochrome Monitor.
- Enhanced Proffessional Key Board - (101)
- Monochrome Graphic Card with Printer Port.



MONOCHROME:	**$1345.00**
COLOR ADD:	**$185.00**
EGA:	**$1750.00**

PC/AT TURBO BARE BONES SYSTEM

$599.00

- ATI-2000 CPU MB 6/10 MHz 0 Waite State w/640K Memory on Board (EXP to 1MB)
- 8 EXP Slots CMOS Clock
- 200 W Power Supply
- FCC Approved Class B.
- Made in USA

DEALER CALL FOR QUANTITY PRICES

Network
Lowest Price Available

AT-386 SYSTEM CALL FOR PRICES

ALL PRODUCTS GUARANTEED • Cashiers Check • Money Order • C.O.D. • Shipped Immediately • Prices Subject to Change without Notice • Some Quantities May Be Limited.

News And Changes

By Mary Eisenhart

Before we get to our monthly correspondence, a little message from the **Bureau of Emotional Preparedness:** Folks, as you may have noticed, our user group listings are getting a little unwieldy. More than that, human nature being what it is, there seems to be a positive epidemic of bulletin board operators who fold their tents and depart without bothering to notify us, causing great annoyance for the luckless owner of their new phone number and the board's would-be callers. It is not unusual these days for us to receive a call from some public-spirited soul who gives us a list of ten or so now-defunct boards running happily in our listings. This kind of inaccurate information hurts everybody.

Therefore, after looking at various ways to continue to maintain timely, accurate and manageable listings for your benefit while eliminating what we suspect is multiple K of bad info we have decided to take the following steps.

We're going to start from scratch next April at the West Coast Computer Faire. If you'd like your group or board to be included, send us a new listing using the form in this issue. The deadline is February 1, 1988. All those who do not send us a new and updated listing will have their listings removed — and thousands of Faire-goers won't find out about them.

In the future, we'll ask readers to update their listings on a yearly basis. In the meantime, as the year ends, you might start thinking about sending us a new and current listing soon. Please try to keep your message to around 15 words or so. And if you know for a fact that one of our listings is inaccurate — especially if you know for a fact that people are being inconvenienced — please call us at (415) 652-3810 and give us the information; the offending data will be removed as quickly as the exigencies of print allow.

And now for some *accurate* info, to the best of our ability…Phil Sih and John Little of The Portal System are making you an offer they hope you won't be able to refuse — unlimited use of the system for a flat fee of $10 per month. Portal, you may recall, is a conferencing system based in Cupertino and running easy-to-use software on speedy Sun workstations. It offers a variety of discussion groups, plenty of room to start your own, plus email facilities, usenet access, and a uucp gateway. Call (408) 973-9111 for information.

Meanwhile, what's arguably the Bay Area's most multifaceted online conversation continues on **The WELL** (415/332-6106 data, 415/332-4335 voice, $8/month, $3/hour). At presstime, for example, the **Macintosh** conference was discussing Famous Euphemisms (aka Lies), October's annual **Hackers Conference** (article next month) was being recapped in the **News** conference, the **Work** conference was enjoying a lively discussion of occupational burnout, and the tie-dyed hordes of the **Grateful Dead** conference were considering everything from **Jerry Garcia**'s Broadway shows to video releases to community involvement. If there isn't already a discussion of your favorite subject, you can always start one, and new users with a wide variety of interests arrive daily.

Ari Davidow, who co-hosts the WELL's **Jewish** conference, sends along the news that the **Hebrew Users Group** (which, as you may remember, supports the use of Hebrew and Hebrew-based languages on microcomputers) now has a quarterly newsletter ($7.50 for four issues) and can be reached by calling **Jack Love** at (415) 848-7793; US Mail can be sent to HUG, c/o Berkeley Hillel, 2736 Bancroft Way, Berkeley, CA 94704.

Another WELLbeing, **Bob Bickford,** who hosts the **Liberty** conference, is also the sysop of the **Liberty Bell BBS,** dedicated to issues of Libertarian and New Age politics. The Liberty Bell, according to **Mike Iddings** of the **Santa Clara County Libertarians,** operates 22 hours a day,, seven days a week at (408) 243-1933, 8-N-1, 1200/2400. It's also FidoNet node 143/6. Online Libertarians and other connoisseurs of political debate are invited.

Also on the political front: **David Creighton** of Berkeley would like to get the word out about **tecNICA.** tecNICA volunteers, he says, donate two or more weeks of their time to supporting Nicaragua with their computer, engineering, or other skills. If you're interested, please contact David at (415) 848-0292.

Post-AppleFest info: **Bob Sherman** of Miami invites you to check out **Miami's Big Apple,** now in its seventh year of operation as an online Apple users' group. It features great Apple support and is accessible using PC Pursuit. The board runs 24 hours a day at (305) 948-8000; parameters are 8-N-1, 300/1200.

Down in Redondo Beach, the erstwhile **South Bay Apple III User Group** has gone through a few changes and has been reborn as the **South Bay Apple Mac Club. Gary Fortune** sends us this news, adding that meetings are on the last Wednesday of the month at varying locations. He invites your calls to his voice number (213) 316-7738, and also invites modemers to check out the club's BBS at (213) 534-4311.

Those interested in the practical implications and opportunities of Artificial Intelligence and Expert Systems in today's business world are invited to check out the **AI-Expert System For Business** group. You can call **George Polzer** for more information at (415) 564-6664; there's currently a quarterly newsletter, and a BBS is in the works.

Devotees of the deathless Commodore 64 who want to explore the possibilities of the GEOS operating system, there's good news for you. **Gary Sydeski** of Lakewood sends word about **GEOS Users,** a group dedicated solely to helping C64 and C128 users learn more about GEOS. All information and disks are exchanged by mail, so if you don't happen to live in Lakewood you can still take advantage of this club. Gary says the fledgling group has been publishing a monthly newsletter since March and already has over 70 members. Write GEOS Users, 21634-A Belshire Ave., Lakewood, CA 90716 for more information.

Another new group, this one for the Amiga, is starting in Bella Vista, CA. **David L. Murphy,** president of the **Northern California Amiga Club,** says that the group is still meeting at the homes or businesses of individual members and looking for a permanent meeting place; meanwhile, Northern Amiga users looking for opportunities to explore their machines and to give or receive support are invited to contact the club at P.O. Box 54, Bella Vista, CA 96008, (916) 472-3237.

I'd like once again to offer heartfelt thanks to the many faithful correspondents from groups all over the state (and elsewhere) who keep this news/communications/outreach process going. Your efforts are appreciated, and further communiques invited.

Keep the cards and letters coming to *MicroTimes* User Group Network, 5951 Canning Street, Oakland, CA 94609. And send that email to **microx** on The WELL, (415) 332-6106. See you next month. ☐

BULLETIN BOARDS

213

Lynzie's Motherboard (818) 508-6482/(213) 650-0519. 24 hours, 300/1200/2400 baud, 8-N-1. Private E-mail, download library, dating matchup, interactive chat between users, 4 phone lines on rotary. Public boards include employment, food and restaurant reviews, sci-fi, political, debate, for sale and many more. Monthly social happenings for local users. Sysop: Lynzie Flynn.

Bulletin Board System. BBS devoted to handicappers and racing fans in So. Cal. On line every weekend. Log-on: race data for Santa Anita, Hollywood Park and Del Mar. (213) 934-6026.

Videodrome BBS. Where computers and video meet. (213) 324-5882. Open weekdays 4 pm - 2 am, weekends 12 pm - 2 am. A Commodore 64 system.

HUG1. (213) 874-8256. 300/1200 baud, 8-N-1, 24 hours. The official BBS of the Hollywood Commodore User Group (HUG). All HUG members and visitors are welcome to drop by. Sysop: Jose Vasques.

International Collectors Network. Coins, stamps, baseball cards, books, records, antiques and anything collectable can be bought, sold, or traded on the International Collectors Network BBS. Regional lists of collector events and shows in many categories. Also names and addresses of many collector organizations. Accessible using PC Pursuit. Data phone available 24 hours, 7 days at 300/450/1200/2400, 8, N,1. (213) 204-0646.

The Computer Consultant's Network, (213) 479-4074. Running a modified version of Martian! Software. 24 hours a day. This is not a job board, but merely a place for computer professionals to network and share information.

Computer Conference Center. (213) 212-5267. TBBS w. Commodore, IBM, TI, Atari, Epson, Apple etc. sub-boards. Large DL with CP/M, MS-DOS and TR-DOS programs. Laurie Flood, sysop.

Hughes Aircraft Message Service. Uploads and downloads for Mac, IBM, Commodore, Atari, etc. Public message boards. (213) 549-9640. 300/1200, 24 hrs., 7 days.

Monolith-1.7 great public boards, private electronic mail, social events. (213) 659-JEDI. 24 hours, 1200/300. Sysop: Erik Goldman.

Mid-Cities Atari ST BBS. 300/1200, 8-0-1, 24 hours. (213) 867-1943. Sysop: Darin Ferraro.

PC Heaven. A multi-computer BBS that features downloads for many different PCs. E-mail, files for various machines, general to SIG message bases. No fees, no special application request forms. Just a fun BBS for everyone. (213) 374-7929. 300/1200, 7 pm-7am M-T, 24 hrs. F-S-S. Sysop: Tony Reeves.

T.U.S.D. (213) 533-4545, 10+ megs downloads, WWIV software, BBS list, several message bases and SIGs, mail, online help. Run on IBM AT, 24 hours for summer (5pm-7am during school). Free, 300/1200 baud. Sysop: Wayne Hoover.

Jukebox Bulletin Board (JBBS) (213) 670-8053. 8-N-1, 24 hours, 7 days, 300/1200 baud. Message board for buyers, sellers, and anyone interested in antique jukeboxes. Free. CP/M password available on request. No Fees. sysop: Ray Etchepare.

Secret Partner 1. (213) 543-5273. 8-N-1, 24 hour, 300/1200 baud. "Find your long-awaited sweetheart." Walter F. Howard, sysop.

Time-X-Change. (213) 329-3922. 8-N-1, 300/1200 baud, 24 hours. The West's only BBS dedicated entirely to the Timex-Sinclair and CP/M user. Online games and information programs, full feature electronic mail and message system, public domain software. Free. Sysop: Dave Clifford.

Videoman RCP/M and Media Man Database. (213) 666-8588, 300/1200 baud. Hollywood's only remote computer for the show business and entertainment community. Free comprehensive databases, including hard-to-find products and services (US and Canada), television/motion picture production /post production services (world-wide), Los Angeles restaurant guide, remote access computers (world-wide), People In Entertainment and many more. CP/M, MS-DOS pd programs. 40 megabytes and growing. 7 days, 24 hours. Sysop: Norman H. Strassner.

Bloom County "Nochange" BBS. (213) 615-0528, 8-N-1, 24 hours, 7 days, 300/1200/2400 baud. Bloom County is an IBM BBS running Nochange software. This system features online games including Pyroto Mountain, 200 Sector Tradewars, Empire, Original Adventure and more! There are over 30 megs of space devoted exclusively to the latest PD software and a great e-mail system too. Call the ultimate bulletin board today. Sysop: Brody Schiess.

Find-A-Home. BBS emphasis on locating roommates, tenants, rentals, buyers and sellers for both residential and commercial properties. Also private mail and public forums including roommate discussions, deal-

4th Anniversary Sale!!

SAVE $300 - $800 and MORE!

on ANY AVS System

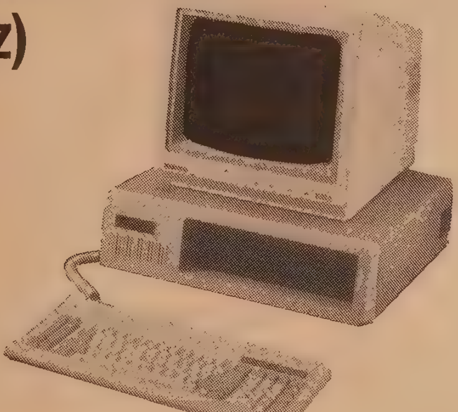
Thank You for 4 years of your business. We'll continue to serve you w/ GREAT PRICES & QUALITY PRODUCTS.

Special of the Month Buy ANY AVS System and get $50 OFF on a COPAL 1500 Printer. . . 180 cps, dot matrix/letter quality. . . . Normally $325. . . . JUST $275 WITH ANY SYSTEM!

AVS PC/XT Turbo System (8 MHz)

- 8088-2 CPU
- 4.77/10 MHz
- 640K Memory on board
- 2 - 360K Floppy Drives
- FDC
- 150 W Power Supply
- MGPA Card (Herc. comp.)
- Hi-Res TTL Monitor
- AT Type Keyboard
- AT Type Case
- Fully assembled & tested
- 1 Year Warranty

$599
Reg. $899



30 MB AVS PC/XT Turbo System (10 MHz)

- 8088-2 CPU
- 4.77/10 MHz
- 512K Memory on board
- 1 - 360K Floppy Drive
- **30 MB Hard Disk**
- FDC
- 150 W Power Supply (100/220 volt switchable)
- MGPA Card (Herc. comp.)
- Hi-Res TTL Monitor (720 X 340)
- AT Type Keyboard
- AT Type Case
- Fully assembled & tested
- 1 Year Warranty

$859
Reg. $1179

AVS 286 AT System (10 MHz)

- 80286-2 CPU
- 6/10 MHz
- 512K Memory on board (exp. to 1 MB)
- Clock/calendar w/ battery
- 1.2 MB Floppy Drive
- FDD/HDD Controller
- 200 W Power Supply
- MGPA Card (Herc. comp.)
- Hi-Res TTL Monitor (720 X 340)
- AT Type Keyboard
- AT Type Case
- Fully assembled & tested
- 1 Year Warranty

$985
Reg. $1293

EGA AT 286 System (10 MHz) With Printer

- 80286-2 CPU
- 6/10 MHz
- 512K Memory on board (exp. to 1 MB)
- 1.2 MB Floppy Drive
- FDD/HDD Controller
- 200 W Power Supply
- EGA Adapter
- CASPAR EGA Monitor
- AT Type Keyboard
- AT Type Case
- **30 MB Hard Disk**
- **COPAL 1500 PRINTER w/ cable**
  - Dot matrix and letter quality
  - 180 cps (reg. price $325)
- Fully assembled & tested
- 1 Year Warranty

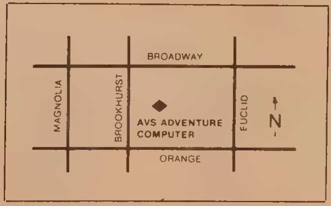
$1895
Reg. $3150

Miscellaneous: Multi I/O card, EGA card, Power supplies, cga cards, mono adapters, mouse. **Monitors:** RGB, EGA, TTL **Hard Drives:** 20 MB, 30 MB, 40 MB **Modems:** 300/1200 Baud, 300/2400 Baud **Printers:** Copal, Citizen, Epson, Star. . . **CALL FOR CURRENT PRICES!!! 12 MHZ AVAILABLE. . . . CALL**

AVS
ADVENTURE COMPUTER

Business
Computer
Systems

512 S. Brookhurst #8
Anaheim, CA 92804



Hours: Mon - Fri 10 - 7
Sat & Sun 10 - 6

ALL PRODUCTS GUARANTEED.
Cashiers Check - Money Order
C.O.D. - Shipped Immediately
Prices Subject to Change w/o Notice.
Some quantities may be limited.

714 533-8291

ing with landlords, foreclosures, real estate matters, investment opportunities, money matters, employment opportunities, current events, automotive, classified ads, humor, trivia. Operating on an XT clone with 20MB hard disk at 300/1200 baud. Online 24 hours. We're a new and free service. Call now! (213) 325-7269. Sysop: Ada Owen.

99 BBS. (213) 947-7777. 7 bits, even parity, full duplex, 300/1200 baud. For TI-99/4A computers. Operates 24 hours, 7 days. Downloads, uploads, multiple message boases and more. Sysop: Roger Davis.

CompuCenter Long Beach. (213) 421-1041. 8-N-1, 24 hours, 300/1200. Multi-interest board in Long Beach with everything from Aviation sub-board to Mature Topics and IBM, C64/128, and Amiga. Sysop: Ken Cothern.

Intelligent Solutions BBS. (213) 494-1243. IBM software and hardware tips. No registration, no rules, no restrictions to new users. Easy-to-use PC-Board system. Our user base consists of some of the most knowledgeable consultants and programmers in Southern California. 300/1200/2400 support vice, 8-N-1, 24 hours. Sysop: Thompson McDonald.

The Talk Line. (213) 938-9697. 3 message bases: general board with discussions on current subjects or anything anyone wants to debate, a sports board and a music / movies board. 6 pm-7am. 300 baud, 1 stop, 8 WL, no parity, full duplex. Sysop: Frodo.

The Starship Sardonyx Net. (213) 467-6667. 8-N-1, 300/1200, 24 hours. We offer extensive general files, online games, up and download subs, 8 message bases, e-mail. Large public domain section for Commodore users. Sysop: Zed Yago.

LEGACY/The Law Network. Free exchange of messages and information on Computer Law, Entertainment Law, and Communications Law, and forum for new ideas and directions in the practice of law and administration of justice. Features include e-mail, online law journal, standard legal forms and agreements, and a pro bono conference for free legal advice to non-lawyers. Operating 24 hours at 1200 baud, 8-N-1. Accessible using GTE's PC Pursuit. Call (213) 553-1473. Sysop: Robert H. Kohn, Esq.

BBS-64 Shopper. (213) 598-5841. 8-N-1, 24 hours, 300/1200 baud. Sysop: Scott D. Edson.

K&L Tele-Catalog. (213) 327-2255. 24 hours, 300/1200, 8-N-1. 27 sub-boards including electronic and computer shopping, general board, game boards, club boards, classifieds, tips and tricks. No fee. Sysops: Louis B. Dubin, John Altpeter.

Atari Telecom. (213) 494-7083. 24 hours, 300/1200 baud. Supports all Atari computers. 20+ megs online storage. 16+ SIGs for discussion. Online games, role-playing games, ATASCII graphics, large online info libraries, ul/dl. Standard parameters. New users needed! Sysop: Dr. Matrix.

The Crest RBBS. (213) 471-2518. Call for one of the best IBM RBBS around, running with the latest merge for RBBS-PC. Win free time weekly with secret password. Features include the latest e-mail, ul/dl, color/music online. Best of all it's FREE! Operating 24 hours a day at 2400/1200 baud. NO 300 BAUD ALLOWED! Sysop: Eric Newhouse.

The Luv Connection. (213) 663-6886. 300/1200/2400 baud, 8-N-1, 24 hours. Nine lines, private e-mail. Chat online with other users. 28 different boards to access in the Tack Room: The Perfect Matchmaker, Dating, Music/Video/Film, Sports, Robotics, Computer Stuff, Programmers Lounge, Handicapped (Physically Impaired), Sauna, Men's Locker Room, Powder Room, Take Aim. The largest library in SoCal for the latest demos and Public Domain programs for D/L. Luv Connection Network offers true nationwide networking. Prime sysops: Todd & Charlotte.

LAAUG-LINE. (213) 559-7367. 300/1200, 7 days a week, 24-hours. Sysop: Gary Woolard.

Hollywood Commodore User Group Hug #1. (213) 466-3049. 8-bit, no parity, 1 stop, 24-hours, 300-1200 baud, running on C-NET. Sysops: Joss A. Vazquez & Zed Yago.

Alinco Ind. RBBS. (213) 402-4716. 300/1200/2400 baud, N-8-1. Upload and download of public domain files. E-Mail, conferences: games, communication and technical references, systems and peripherals price list. This is a totally new board. Sysop: Albert Chang.

Long Beach AIDS Information BBS. (213) 663-2025. 24-hours, 300/1200 baud. Information on AIDS issues, especially experimental drug therapies. Also serves as a forum for discussion. Sysop: Ken Ragge.

The Long Beach Bulletin Board. (213) 438-6783. N-8-1, 24 hours, 300/1200/2400 baud. The Long Beach Bulletin Board has been in operation for over three years supporting 3000 plus users. We have over 60 megs online with over 1500 files for downloading. Special Interests Groups include AD for BBS notices and sale items, CD for all CAD/CAM applications, COMM for discussing communications topics, GAMES, MIDI and STARFLT. All SIGS are open to the public. Call one of Southern California's oldest RBBS systems in operation. Sysop: Forrest Litke.

Landing Strip. (213) 597-7773. 300/1200, 24 hours, WWIV software. A computer board service dedicated to aviation and online adventure games. Features aviation related downloads for IBM computers and has download areas for Apple and C-64. Unique online games that must be played to be fully appreciated. Sysop: One-Eight Charlie.

Chat Line. (213) 534-4311. 24 hours, 300/1200 baud. Multi-line, multi-user. Interactive chatting between online users. Downloads for all popular computers. Innovative and informative public message exchanges. E-mail. Sysop: Tony Broderick.

Digital Diversions. (213) 423-5797. 24 hours, 300/1200/2400 baud. Accessible through PC Pursuit. On-line 24. Fun and friendly. File transfers. Special interest groups. Give us a try! Sysop: Jeff Glassman.

LA Sportsbook. (213) 545-6528. 8 bit, 1 stop, No parity, 24 hours, 300 baud. For the sports and horse racing fan in Southern California. Talk sports and horses. We pick winners at better than 50%! Sysop: Rich Kopro a.k.a. The Sports Master.

Melodyland BBS. (213) 225-9279. 8-N-1, 24 hours, 300/1200 baud. Melodyland is a message only BBS with several conferences filled with stimulating discussion. Also features a "Friends of Bill W." area specifically created for members of Alcoholics Anonymous and other 12-step programs. The AA section features a local "e-meeting." Melodyland is a participating node in the Recovery National Network, a nationwide "echo" for members of the 12-step programs. Sysop: Melody

(PG) Board. (213) 836-6439. 24 hours, 7 days, 300/1200 baud, 8-N-1. Relationships, sexuality, money, morality, economics, politics, religion, art, music, literature, theatre, philosophy, the nature of the mind. If they mean a great deal to you, please give us a call. No uploading or downloading. Conversation only.

CompuCenter/LA. (213) 435-3757. 8-N-1, 24 hours, 300/1200 baud. Multi-user board including conferences for Amiga, IBM, C64, C128, TRS-80. Reviews on software and hardware. For Sale section and much more. Up/Downloads section for all listed. Sysop Rick Gaspa.

Ump's Video/Communications BBS. (213) 413-1146. 300/1200 baud. 4:00 pm to 2:00 am. Hundreds of video/movie titles waiting for you. If you're a serious videomaniac and absolutely must have your very own copy of "Porky's," "Dracula," or "Rocky IV," we've got all the titles you'll ever want. R, PG and G ratings. Drama, Horror Thrillers, Musicals, Sci-Fi, Comedy and Classics. To order, complete the order form in the order file or call us directly at our Los Angeles office. Also available to users is our Resume Transmittal Service. Input your resume onto our transmittal file. Each month we mail over 200 transmittal diskettes to companies looking for skilled people throughout Southern California (soon to be a nationwide service.) No fee for first time users. Sysop: Stephen R. McCormick.

Gladiator's Den. (213) 860-2221. 300/1200 baud, 8-N-1, 24 hours.

Computer Quick, Inc. (213) 941-3554. 300/1200 baud. Even, 7 data, 1 stop. BBS dedicated to repair, upgrade or information on computers only. Sysop: Sam Noonon.

Spenser's BBS. (213) 732-0109. 8-N-1. Sysop: Chris Spencer.

Amiga Exchange. (213) 325-1796. 300/1200 baud, 8-N-1, 24 hours. Downloads, uploads, e-mail, news, rumors, operating tips, hardware/software reviews, classified ad section. This is a new BBS. Sysop: R. Takahashi.

The Westside. (213) 933-4050. 300/1200/2400 baud, 8-N-1, 24 hours. Ten lines with private and group chat, e-mail, match, 30 public message and game boards, on-line library and electronic buyer's guide/database. Sysop: Dave.

Star Wars Lovers Of America (213) 867-7724. No modem. 9:00 am–12:00 pm. Run by the Driveway Group Ltd., User Group. Devoted to LucasFilms and Star Wars. Tracking of software, figures, data and more. If you have the SW collection, figures, any software that pertains to SW then call. We could buy, sell, trade, items. Information on new releases from George Lucas. We love Star Wars and George Lucas. If you do too, then call. Sysop: The Force.

The Beta RBBS. (213) 393-9777. 1200/2400 baud. No 300 baud allowed. 24 hours. New feature articles for audio and videophiles. A special emphasis on the latest video technology. Other recent additions include movie and concert reviews and movie news. Beta RBBS is not another downloading service but a BBS that entertains with informative bulletins and lively discussions.

Easy Reader Newspaper. Electronic edition. Available on Tele-Web. (213) 372-4050. 7-E-1. Type GO EASY upon entry. Includes movie listings, classifieds, articles. Order classified ads on-line. Send letters to the editor.

LA Weekly Newspaper. Electronic edition. Available on Tele-Web. (213) 372-4050. 7-E-1. Type GO WEEKLY upon entry. Includes entertainment listings. Order classified or a subscription on-line.

MicroTimes Magazine. Electronic edition. Available on Tele-Web. (213) 372-4050. 7-E-1. Type GO MICRO upon entry. Includes articles, BBS listings and much more. Unlimited free access.

Hughes. Support system. Available on Tele-Web. (213) 372-4050. 7-E-1. Type GO HUGHES upon entry. Online career center. Over 100 job opportunities. Send resume direct to Hughes.

Rockwell. Available on Tele-Web. (213) 372-4050. 7-E-1. Type GO ROCKWELL upon entry. El Segundo, online career center. Engineering and management job opportunities. Send resume direct to Rockwell.

Mortgage Loans. Available on Tele-Web. (213) 362-4050. 7-E-1. Type GO LOAN upon entry. Mortgage loans and discount loan rates. Online 24 hours a day. Provided by Pacific Mortgage Group, suppliers of discount home mortgage loans.

Hatzlacha. (213) 466-3861. 300/1200 baud, 8-N-1. Jewish BBS running Stonhenge Computer Message System. Also general PC-compatible discussion.

The Hotline. (213) 285-0810. 300/1200/2400 baud. 24 hours. Multi user. Affiliated with the National Data Broadcast System. Now online for all of Southern California with Newsbytes, Computer Entertainer Newsletter, list of music and software hits, weekly columns by Dan Gutman, electronic mail. Video take-out mail order with online ordering of software. Plus many exciting new features. Sysop: Jon Badeaux.

Flipside BBS. (213) 693-6971. 300/1200 baud. Midnight-Noon. Flipside's (L.A.'s oldest punk rock fanzine) electronic counterpart. Sysops: Al and Hud.

Carrier-Point Information. (213) 423-4999. 300/1200/2400 baud. 300 baud callers call (213) 423-8023 or 423-8641 after 9:00 pm until 10 am. 10 lines, 9 in rotary. Open 24 hours except from 2:00 am to 4:00 am. Accessible using GTE's PC pursuit.

Best and Worst Number 1. (213) 864-2105. 1200 baud, 8-N-1, 24 hours. Commodore punter file transer. Sysop: Dan Klaffke.

Far Side. (213) 540-6853. 2400 baud, N-8-1, 24 hours. Running from Nochange software. Sysop: Rick Parker.

PPC Personal Programming Center. (213) 978-0024. 1200/2400, 8-N-1, 24 hours, HP hand-held programmable support, HP41c, HP-71b and HP-28c. Sysop: Richard Schwartz.

619

Ramona BBS. (619) 789-6235. 24 hours, 300/1200 baud, C128, C64, Amiga, Atari, IBM, CP/M. P.O. Box 373, Ramona, CA 92065. Sysop: Digiteer.

Sysware BBS. 24 hours, 300/1200 baud, (619) 278-8661. Commodore machines only. Sysop: Don Malette.

The Nassau XPress. (619) 433-XPRS. 8-N-1, 300 baud, 24 hours. An information and entertainment BBS with 11 message bases including electronics, amateur radio, computer news, music, adventure games, BBS review. Full access is granted to long distance callers with same day validation for new users. UL/DL available using XModem or Punter. Private e-mail, text files, online games and utilities. Sysop: Dan Wright.

Willy-Net. (619) 535-0816. 300/1200, 8/N/1, Large download and message area. IBM. Sysop: Willy Bergner.

ERA Red Walsh BBS. (619) 455-8239. 300/1200 baud, 7-E-1, 5:00 pm to 10:00 am. BBS is for the dispersal of information about real estate, San Diego listings, and ERA Walsh & Assoc., Realty. Downloads/Uploads, Doors (coming soon) and fun! Operated on RBBS-PC for IBM PCs. Sysop: Mark East IV (Osiris).

Culture Schock BBS. (619) 438-2962. 300/1200/2400 baud, 24 hours. All computer types welcome. "Most popular BBS in the area." Sysop: James Rexes

714

The Consultant's Exchange BBS Serving professional computer consultants and students since 1983 with the finest public domain software for the IBM-PC. Featuring consultants list and job list. (714) 842-6348 24 hours.

Computer Consultant's Network problems, solutions for business,legal and engineering problems. Referral service. (714) 982-5994 intro file.

El Toro RBBS/RCPM. (714) 855-0672. 24 hrs. 7 days/week. 300 / 1200 / 2400 baud. No charge, open access, no registration. Specialize in ZCPR3 and CP/M PD utilities. Sections for AMPRO, SB180, dBase II, TPascal, Modula-2, Wordstar, ZCPR3, modems, SIGM and utilities. Over 3000 programs in 88 megabytes online. Public E-mail system. Easy to use ROS system. The collection point for Modula-2 in So. Calif.

K-WEST. (714) 646-3060. 8-N-1, CP/M and DOS. 24 hours, 300/1200/2400. Sysop: Peggy Lloyd.

The Byte Zone BBS. 7 days, 24 hours, 300/1200 baud. Serves all Tandy computers and many others, including MS-DOS. Features adventure help files, electronic mail, message bases and download menu. Sysop: Franco Collino. (714) 639-3566.

CMC Computer Systems. (714) 835-0910. Information boards: Apple II, Apple III, Laser 128, IBM, Buy/Sell, hard disks. 300/1200 baud, 24 hours. Sysop: Charles F. McConathy.

Amiga-Line. (714) 772-4097. 24 hours, 300/1200 baud. 100% Amiga for Orange County. Sections for graphics, sound, BASIC, ROM kernel, C, Hardware and Games. Sysop: Tom Jacobsen.

Diamond Bar BBS. (714) 923-1031.300/1200/2400 baud, 8-N-1, 24 hours, 365 days. Ten meg online. Affiliated with the Diamond Bar User's Group. Sysop: Jonathan Hart.

The WOCCUG Board. Operated by West Orange County Commodore User Group. EBBS, 8-N-1, 24 hrs, 300/1200. (714) 772-4182. Sysop: Mark Stanford.

The Buckeye BBS. (714) 821-0589. C64, Punter, Xmodem, 300/1200 baud, 24 hours. Sysop: Art Collins.

FBBS. (714) 823-3673. 24 hrs., 300/1200 baud, full duplex. 50 megabyte system based in Fontana. Downloads for Commodore, Amiga, IBM, Atari, Apple, CP/M. 17 active message bases, weekly online magazine. Sysop: Larry Krzewinski.

GameNet. (714) 520-4263, 24 hours, 300 baud, multiuser board. This Orange County based system features interactive games, a chat area, and an online mail section. Sysop: Merlin or Patches.

Bits and Pieces Times BPT-MAIN. (714) 630-5619. 300/1200/2400, No parity, full duplex. BBS determines results by return key. You must press return key to get on. Guardian-Fidonet/125. Large C64, 128, Amiga and IBM library. Sub board 4: Commodore Club. Sub board 5: IBM. 8:00 pm-9:00am, M-F. BBS runs continuously from 8:00 pm Friday to 9:00 am Monday. Sysop: Mike Dalton; Sub: John Callaci.

Software Exchange. (714) 552-3515. 300/1200/2400, 24 hours, 7 days, 8-N-1. Specializing in public domain and shareware for IBM and compatibles. Over 2000 programs in 122 megabytes on line. Features include private and public message bases, conferences and online help and menu screens. Beta Tester for "Wildcat," the next generation of BBS software. Sysop: John Coon.

C-TUG BBS. (714) 458-1288. Punter protocol, 24 hours, 300/1200 baud. Sysop: Les Gertz.

77-Amiga. (714) 77-AMIGA. 300/1200 baud, 24 hours, 40 meg. drive. Sysop: Al Cheser.

French Connection. (714) 858-8111. 300/1200/2400/9600 baud. Ten multi-line BBS in Orange County. Dating service, 500 megs of software for users. Sysop: Stephan M. Cohen.

The Pleasure Connection. (714) 773-5326. DYM 502 Buena Park CA. 300/1200 Baud, 24 hours. Computer dating, open forums, adult boards, etc. Sysop: Russ.

Tripwire Wildcat. (714) 964-1146. 8-N-1, 300/1200/2400 baud, 24 hours. New BBS. Tripwire BBS is providing both public and private telecommunications to users on a WILDCAT BBS system. The latest in PD software is provided in nineteen different file sections. After 75 days of operations the board is providing over 750 files to users and continues to grow daily through active support. Sysop: William Kidd.

Nebula 6 BBS. (714) 595-4020. 300/1200 baud, 20 megs. Online full of download material for Apple, IBM, Atari, Tandy and Amiga. There is a vast amount of space for Commodore files. The bessage bases, text files and online games are extremely popular. Monthly giveaways take place dealing with game winners of trivia, etc. If you would like info on the system write to: Nebula 6 BBS, P.O. Box 1071, Walnut Creek, CA 91788. Call now and join the fun. Commodore based. Sysops: Ultimacy & Dr. Foxe.

F&W Guns. (714) 653-0494. 300/1200. 8-N-1. Sysop: Louis Ringe.

The Circuit Board. (714) 778-0948. 300/1200/2400, 8-N-1, 24 hours. IBM-PC software. 106 MB disk space. Sysop: Dave Kleinschmidt.

The Amiga Inn. (714) 283-3202. 1200 baud, 8-N-1, 24 hours, 7 days. The Amiga Inn is dedicated to the full line of Amigas: 500s, 1000s and 2000s. Reviews, games, help, etc. All use is free. Please visit the Inn. Innkeeper: Steve Snyder.

1139/South. (714) 545-1706. 300/1200/2400 baud, 8-N-1, 24 hours. Located in Costa Mesa. Sports conferences and file area. Five doors. Sysop: KC.

Color Galaxy BBS: (714) 839-5830. 300/1200 baud. 7-ODD-1. 24 hours. Color Galaxy BBS for the Color Computer! Free access. Supports X-Modem, uploads, downloads, games, adventures, utilities, graphics and more! Ten message bases and private mail, including private uploads to other users. Sysops: Dave Cragun and Tom Guzman.

Bridgecard BBS. (714) 761-0340. 300/1200 baud, 24 hours. Supports IBM, Amiga, C64 and Apple. Located in Anaheim, CA. Sysop: Arthur Collins.

805

Thousand Oaks Technical (805) 493-1495. This massive 64 megabyte board has a mind-boggling number of downloadable programs. The board has no bulletin board feature and allows unlimited upload time. Download time is limited depending on upload exchange.

KERNCOM. (805) 322-8800. 300/1200/2400 baud, 24 hours, 7 days. KERNCOM has operated continuously since March 1983 for the IBM community. KERNCOM is owned by the Kern Independent PC Users Group and is never off line except for routine maintenance. Sysops: Rick Heming and Jim Harrer.

CCCUG BBS. Central Coast Commodore Users Group. (805) 934-2216. 24 hrs/7 days, 300 baud, Punter BBS protocol for downloads. Sysop: Greg Johnson.

PC Vision. (805) 487-3149. 300/1200, 8-N-1, 40 megs. PC-, MS-DOS programs. Sysop: Frank Driscoll.

Tech-Talk. (805) 922-5488. 300/2400 baud, 24 hrs. 21 meg pd software on a 63 meg system. Online registration, instant access to all files, MS/PC-DOS, CP/M. Sysop: Jerry D. Russell. Public access "Collie ver. 1.2."

CompuLink Fido. (805) 494-3350, 300/1200/2400 baud, 24 ours except during netmail. Huge selection of ham radio files; other features include echomail, Outside, and role-playing games (StarTrek, Gamma World, Champions, AD&D, more!!). 20 megs—call today! Sysop: Eric Daymo.

Mustang WILDCAT! BBS. (805) 395-0650. Bakersfield, CA 300/1200/2400/9600 baud. 24 hours, 7 days. This board serves as the development home for the WILDCAT! Bulletin Board System written for the IBM PC. Free access to over 40 megs of download files on your first call. The message section supports conferences in Turbo Pascal, PC Utilities, WILDCAT! updates, electronic stock reports, and many others. Sysops: Jim Harrer and Rick Heming.

Affection Connection. (805) 527-7464 (Simi Valley), (805) 529-7311 (Moorpark), (805) 496-3657 (Thousand Oaks), (818) 704-8588 (Canoga Park), (818) 367-0248 (Sylmar). 300/1200 baud, 8-N-1, 24 hours. Multi-line/multi-user BBS with on-line chatting. We're a local call to

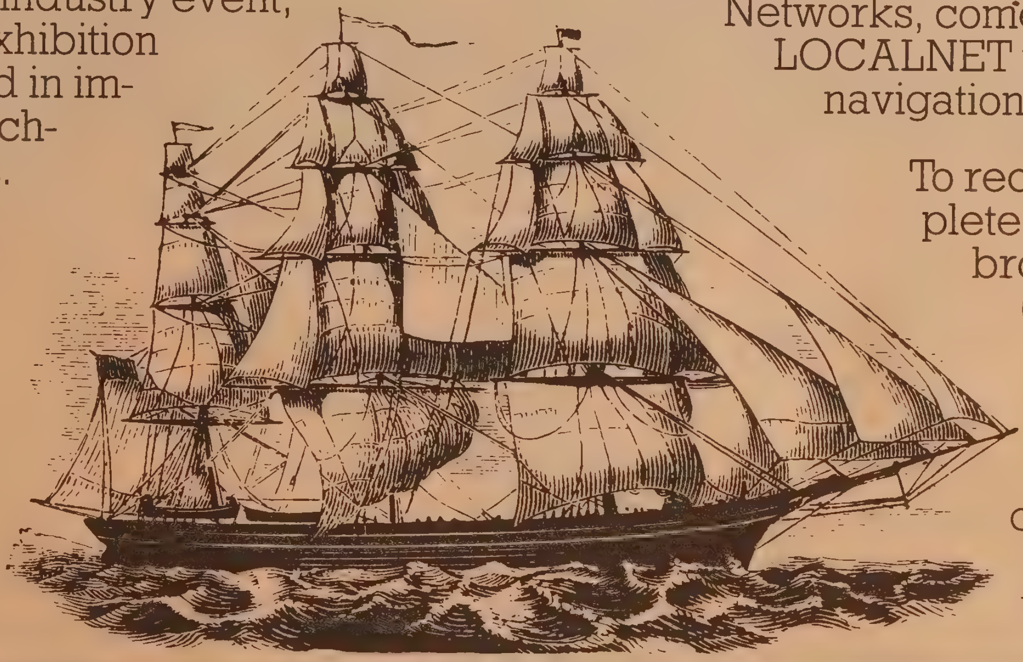
LAN HO!

LOCALNET '87
The Industry Show & Conference
November 11–13, 1987 Los Angeles Convention Center

Set sail for the incredible opportunities afforded by Local Area Networks. Attend LOCALNET '87 at the Los Angeles Convention Center on November 11-13 and discover your company's connection to increased productivity and shared resources.

Now in its fifth year, LOCALNET '87 has grown into the LAN industry event; a conference and exhibition which has expanded in importance with the technology it represents.

At LOCALNET '87, top industry experts will address key issues from the perspective of the industry's major sectors: users faced with planning and implementation challenges, vendors vying for increased marketshare and integrators intent upon profitable niches. On the exhibition floor, you will see, test and compare hundreds of systems, products and services presented by more than 100 companies. If you are responsible for charting a strategic business course with Local Area Networks, come to LOCALNET to hone your navigational skills!



To receive a complete program brochure, call (213) 402-1610 right now.

Use coupon below for complimentary admission to the exhibit hall.

FREE! FREE!

FREE! FREE!

FREE EXHIBITION ADMISSION WITH THIS TICKET!

Please type or print clearly. One person per form. Ticket valid ONLY if information requested below is provided. DO NOT MAIL. **OPEN TO THE TRADE ONLY.**

Name
Title
Company
Address
City State Zip
Phone — Area Code

LOCALNET 87
The Industry Show & Conference
November 11–13, 1987 Los Angeles Convention Center

EXHIBITION HOURS:
Wednesday, November 11th
10:00 a.m. – 5:30 p.m.
Thursday, November 12th
10:00 a.m. – 5:30 p.m.
Friday, November 13th
10:00 a.m. – 4:30 p.m.

1. **Your industry/activity is:** (check one)
   - 1 ☐ Telecommunications
   - 2 ☐ Computers
   - 3 ☐ Medical/Law
   - 4 ☐ Manufacturing
   - 5 ☐ Transportation
   - 6 ☐ Service
   - 7 ☐ Publishing
   - 8 ☐ Electronics
   - 9 ☐ Construction
   - 10 ☐ Government
   - 11 ☐ Utilities
   - 12 ☐ Finance
   - 13. ☐ Insurance
   - 14 ☐ Academic/Education
   - 15. ☐ Consultant
   - 16 ☐ Integrator/VAR
   - 17 ☐ Other (please specify)

2. **Your principal job function is:** (check one)
   - 1 ☐ Marketing/Sales
   - 2. ☐ Engineering/Technical
   - 3 ☐ MIS/DP/Computing
   - 4 ☐ Data Communications
   - 5 ☐ Telecommunications
   - 6. ☐ Research & Development
   - 7 ☐ Finance/Purchasing
   - 8 ☐ Corporate Management
   - 9 ☐ Other (please specify)

3. **How much does your company plan to invest in LAN equipment or services within the next 12 months?** (check one)
   - 1. ☐ Under $1,000
   - 2. ☐ $1,000 – $10,000
   - 3 ☐ $10,001 – $25,000
   - 4 ☐ $25,001 – $50,000
   - 5 ☐ $50,001 – $100,000
   - 6 ☐ $100,001 – $250,000
   - 7 ☐ Over $250,000
   - 8 ☐ Don't plan to invest this year
   - 9. ☐ Don't know

4. **Number of employees in company:** (check one)
   - 1 ☐ 1 – 50
   - 2 ☐ 51 – 100
   - 3 ☐ 101 – 250
   - 4. ☐ 251 – 500
   - 5 ☐ 501 – 1,000
   - 6 ☐ Over 1,000

5. **Approximate dollar sales volume:** (check one)
   - 1 ☐ 0 – 100,000
   - 2 ☐ 101,000 – 500,000
   - 3 ☐ 501 000 – 1 million
   - 4 ☐ 1 1 million – 5 million
   - 5 ☐ 5 1 million – 10 million
   - 6 ☐ 10 1 million – 15 million
   - 7 ☐ 15 million – 50 million
   - 8 ☐ Over 50 million

CMC 1987 LNMT

$10.00 VALUE

$10.00 VALUE

more users than any other BBS in southern California. Member of the Southern California Sysops Association. Running on an IBM clone, we welcome users of all systems. We have users under 15 and over 50, so if you cán't find someone interesting you must be dead from the neck up! Upload/download areas for IBM, Apple, C64. UL/DL includes text, games, utilities and more. Public message areas for anonymous advice, bad jokes, general interest, music, movies, buy, sell trade. Always adding new features. "Matchmaking" to help find that special person, and private e-mail for whispering your sweet nothings. Whatever your interests you'll be glad you called. Come visit our comfortable old manor house and make it your "home away from home." Sysop: Devin Z. Woods.

Success BBS. (805) 238-7359. 300 baud, 24 hours. Commodore user group. Sysop: Larry Sarver.

Appleholics Anonymous. (805) 659-0781. 300/1200 baud. Sysop: Jorgé De La O.

818

Granada Engineering Group RCP/M (818) 360-5053. Technical information, BBS lists, and help on CP/M assembly language program writing.

Oracle BBS (818) 980-6743, system password MICROTIMES, is a multi-interest, multi-user BBS running 6 phone lines on a CompuPro. Features include 8K messages, comments on messages, match-maker, adult material section, online CHAT between users and much more. 24 hr., 300/1200 baud.

The Audiophile Network. A databoard system for the music lover and audiophile. Information, specifications, prices and the latest news about hi-end stereo components. 24 hours, 7 days, unless down for repair. (818) 988-0452. (818) 782-1676 (voice) for info.

Speak Easy BBS. 300/1200 baud, runs on an IBM-AT with 26 megabytes. UL/DL with Xmodem, games, 20 message bases, dating service (questionnaire), voting booth. All computers invited! (818) 905-6262.

Ski Center West. 300 baud, full duplex. 50 ski resorts in western states. Bulletin board, E-mail, buy & sell equipment, merchant section, more. (818) 982-2530. Information (voice) (818) 982-3571.

Warren Communications Network. TI BBS, 24 hours, 300/1200 baud, graphics, speech, downloads. Sysop Douglas Davis. (818) 361-9294.

The Hotline. (818) 766-6442 and (818) 762-6161. 300/1200/2400 baud. 24 hours. Multi user. Affiliated with the National Data Broadcast System. Now online for all of Southern California with Newsbytes, Computer Entertainer Newsletter, list of music and software hits, weekly columns by Dan Gutman, electronic mail. Video take-out mail order with online ordering of software. Plus many exciting new features. Sysop: Jon Badeaux.

Party & News Line. Chat with other live users by modem! Read the latest computer news provided by BBS Press. Use your modem and call (818) 842-3322 now! 300 baud.

Lynzie's Motherboard (818) 508-6482/(213) 650-0519. 24 hours, 300/1200/2400 baud, 8-N-1. Private E-mail, download library, dating matchup, interactive chat between users, 4 phone lines on rotary. Public boards include emkployment, food and restaurant reviews, sci-fi, political, debate, for sale and many more. Monthly social happenings for local users. Sysop: Lynzie Flynn.

Light Artists, LTD. (818) 985-0541. 24 hrs, 300/1200/2400 baud. Sysops: Marty and Gerald Lehtola.

The Mogur's EMS. (818) 366-1238. Private and public e-mail, 20 special interest group message sections, 8 database sections, 27 megabytes, upload/download with xmodem, open to all systems, operating systems and users. Numerous unique and innovative features using custom software. In operation since 5/1/81. Multiuser with two lines, 2400/1200/300 baud, 8-1-N. Sysop: Tom Tcimpidis.

The Talk Channel. (818) 506-0620 (Hollywood). (818) 507-1365 (Glendale). Both systems are 300/1200/2400 baud, 8/N/1, 24 hours, 10 lines, multi-user with private & group chat. Large UL/DL library, Data Base, 26 Public boards. California's largest BBS system. Sysop: Gary Clarkson.

LAACE (Los Angeles Atari Computer Enthusiasts). (818) 700-1652. 300/1200 baud, 24 hours, 7 days. Atari 8-bit and ST support. 10 meg online. Sysop: Rich.

The Californian. (818) 368-7497. 300 baud, 24 hours. Color Bulletin Board System runs 24 hours a day, 7 days a week. Dedicated to the TRS-80 Color Computer, but other computers welcome. 9 sub-boards, more soon. No fees; only rule—no attempts to crash the system. Sysop: Jay B. Sanders.

Wizard of Osz RBBS. (818) 709-6978. 300/1200/2400, 24 hrs., CP/M or MS-DOS. Sysop: Mat Satuloff.

RBBS (Bondwell SIG). (818) 787-0156. 300/1200 baud, CP/M and MS-DOS, 24 hours, 7 days. Everyone welcome. No time limit. Instant access to downloads. Files available for PC compatibles, Bondwell models 2 through 36. Hardware notes and tips. New product discussions. Sysop: Jon L. Bek.

Dodge City. (818) 241-4401. 24 hours, 300 baud, soon 1200. Great downloads that change every day. Sysop: The Sheriff.

The MacLodge BBS. (818) 444-9850. 8-N-1, 40 megs, 300/1200/2400. Hours M-F 3:30 pm-7 am; 24 hours on weekends and holidays. Macintosh up/downloads, plus Mac info. Mac users only please. Sysop: Dennis Cosio.

Greycastle BBS. (818) 355-7872. 300/1200 baud, 24 hours, 7 days. Apple Macintosh discussions and news, plus employment opportunities at Pasadena City College. User's Guide available. Sysop: Stan Coutant.

The Outpost RCP/M. (818) 353-8891, 300/1200 baud, 24 hours. Online games, occult and general text files, CP/M, Turbo Pascal. Sysop: Phil Hansford.

AT&T PC6300 Users' Group BBS. (818) 954-0530. 300/1200 baud, 8-N-1, 24 hours. Only So-Cal BBS "officially supported" by AT&T. Sysop: Eric L. Levinson.

AMP PC-RBBS. (818) 570-4406. 300/1200, 8-N-1, 24 hours. For IBM, program downloads and uploads, personal mail, public message system, 40 megs, no fee. New open sale conference for free for sale or wanted ads. Computer products offered at low price. Sysop: Edward Lee.

Affection Connection. (805) 527-7464, (818) 704-8588. 24 hrs., 7 days, 300/1200 baud. Multi-user BBS offering live on-line chatting, matchmaking. Sysop: Devin Woods.

Excalibur BBS. (818) 355-6969. Atari and other computers. 24 hours, 7 days, 300/1200/2400 baud. Sysop: White Knight.

The Computer Tele-Comm System. (818) 362-0995. 24 hours, 300/1200 baud, 8-N-1. We have meeting places, computer supplies. You can apply for credit cards. Enter our contest to win a 20 meg HardCard, 100 diskettes, $50 solid gold piece and more. We are the first BBS to offer an 800 toll free number. Call us direct the first time, after that call us free. Sysop: Dr. Jeffrey A. Keese.

See-Your-Match. (818) 445-0691. 24 hours, 300/1200. Sysop: Mel Minami.

PC Users Group and BBS For Desktop Publishing. (818) 445-8072. 24 hours, 300/1200/2400 baud. Sysop: Mel Minami.

Fantasy Plaza BBS. (818) 840-8066, 300 baud, 24 hours, 7 days. Fantasy Plaza departs from reality with the most unique and entertaining system you've ever seen! You will be impressed! Sysop: Gregg Collins.

Dial-Your-Match#1. (818) 842-6900. 24 hours, 7 days, 300/1200 baud. Meet new friends! The original and most unique friendship BBS. Online since October 1981. DYM network allows you to send messages across the USA.

Machiavelli Interface. (818) 659-1168. 8-N-1, 24 hours, 7 days, 300/1200. IBM and compatible PC board with Net-Mail feature. 30+ megs of downloads, conferences. Sysop: Dewayne Mikkelson.

Luv-A-Hug Moonbeams B.B.S. (818) 772-0384. 300/1200 baud, 8 data bits, 1 stop bit, no parity. Full access restricted to members of Luv-A-Hug only. 25 Megabytes online. IBM compatible, Z-100, and CP/M public domain software. Sysop: Greg Cook.

Dial-Your-Match #1. (818) 842-6900. 300/1200 baud, 24 hours, 7 days a week. We're not just for dating! Come enjoy a BBS that is "different" in every way! Make new friends the fun way! Call Today! Sysop Gregg Collins.

The Multi-User Party Line. (818) 842-3322. A multi-user chat system dedicated to chatting with other callers. Meet new people in an enjoyable anonymous environment. 300 baud, 24 hours, 7 days a week. Sysop: Greg Collins.

Fantasy Plaza. (818) 840-8066. 24 hours, 7 days a week, 300 baud. An impressive experience where you will be treated to "red carpet" hospitality. A system that is not to be missed!

Teenplex BBS. (818) 289-6840. 300/1200 baud, 24 hours. A BBS devoted to teenagers. Message bases include: General, Games, Hardware, Software and Consulting. Supports Commodore and Atari file transfers. Sysop: Al Botts.

The Lunacy PC Board. (818) 894-1248. 8-N-1, 24 hours, 7 days, 300/1200/2400. 270 MB system with over 5,000 pubic domain files available. Five conferences, including games, music, PCjr, movies and astronomy. IBM compatible only. Running PC Board software with two nodes! Soon to go to 9600 baud. Operating since July 1985. Always the latest PD software. Online games and utilities. Free. Registration required. Sysop: Ken Ough.

The Ledge PC Board. (818) 352-3620. 8-N-1, 24 hours, 1200/2400 baud with 19200/9600 baud available to USRobotics Courier HST users. MNP error-correcting protocol available. All systems welcome, featuring full support for IBM PC compatibles. Online video game reviews from Computer Entertainer. Large library of MS-DOS programs. System supports several Doors including Top Gun Trivia, Create an Adventure II, and an ARC door where users may view or extract single files from .ARC files. PCBRO high performance file transfer door featuring ZMODEM, SEALINK, MEGALINK and other protocols. Free to the public. Online registration gives full system access. Sysop: Joseph Sheppard.

Inner Realm. (818) 352-7102. 300/1200 baud, 24 hours. Atari Forum ST. Chess Club. Sysop: IR ROM.

The Space Station-Shopper/BBS. (818) 286-8539. 300 baud, 8-N-1, 24 hours. Brand new, check us out. Sysop: Hugo.

Affection Connection. (805) 527-7464 (Simi Valley), (805) 529-7311 (Moorpark), (805) 496-3657 (Thousand Oaks), (818) 704-8588 (Canoga Park), (818) 367-0248 (Sylmar). 300/1200 baud, 8-N-1, 24 hours. Multi-line/multi-user BBS with on-line chatting. We're a local call to more users than any other BBS in southern California. Member of the Southern California Sysops Association. Running on an IBM clone, we welcome users of all systems. We have users under 15 and over 50, so if you can't find someone interesting you must be dead from the neck up! Upload/download areas for IBM, Apple, C64. UL/DL includes text, games, utilities and more. Public message areas for anonymous advice, bad jokes, general interest, music, movies, buy, sell trade. Always adding new features. "Matchmaking" to help find that special person, and private e-mail for whispering your sweet nothings. Whatever your interests you'll be glad you called. Come visit our comfortable old manor house and make it your "home away from home." Sysop: Devin Z. Woods.

The Adobe BBS. (818) 401-9611. 300/1200/2400 baud. 24 hours, 7 days. Message bases, Atari P/D Files.

Makom Ohr Shalom. (818) 609-1808. 300/1200 baud, 8-N-1, 24 hours. A Jewish BBS with chat mode, downloads, public boards. Religious, secular & humorous themes. Sysop: Don Goldberg (Don 1).

Cryonics And Immortality BBS. (714) 734-0139. 1200 baud, 8-N-1, 3:00 pm to 6:00 am PST. No fee except phone company charges. An information exchange for immortalists and cryonicists. Sysop: Hugh Nixon.

The Scream BBS. (818) 287-4570. 1200/2400 baud. 8-N-1. 24 hours, 7 days. 200 MBs! Full color, online games. Files are for IBM and compatibles only, but all systems are welcome to use MESSAGE base and DATABASE. Merchant sub-board, computer shopping list, great conversation. UL/DL section and much more! This BBS could have the fastest response time around, so you don't have to wait for anything! Free to the public. Online registration is required before full access is given. So when you're ready for a change, Do something different, call Scream BBS. Sysop: ECIII.

Prime Time BBS. (818) 982-7271. 300/1200 baud. 8-N-1, 24 hours. Features private e-mail and multi-interest public boards. New feature: "Computer Shopping" includes wholesale pricing on complete systems and peripherals, disk drives, keyboards, cases, monitors, printers and specials on software. Sysop: Bill Martin.

ASSOCIATIONS

Computer Professionals for Social Responsibility. The LA chapter is interested in computer reliability and preventing nuclear war, the socially useful direction of computer research, and similar topics. They meet most third Wednesdays at 7:30 pm at varying locations. Contact Rodney Hoffman, P.O. Box 66038, Los Angeles, CA 90066, (213) 932-1913 for more information.

Organization of Professionals, Educators, and Novices (OPEN). Tutorials, random access period, feature presentation, public domain library, and CP/M literature are all part of the monthly meetings of Osborne owners/users and MS-DOS transportables. Club BBS and newsletter. Call Frank L. Christ at (213) 498-4186 for more information. Meetings at Learning Assistance Center, CSU Long Beach, 3rd Wednesdays, 7 pm.

The North Orange County Computer Club. This group is the largest and perhaps the oldest in the county. It is affiliated with a large number of special interest groups and offers something for just about every user. General meetings are usually the first Sunday of every month in the Hashinger Auditorium, Chapman College, Orange. For info, call (714) 998-8080.

The South Orange County Computer Club. A general computer club that meets the first Tuesday of every month at 3545 Harbor Blvd., Costa Mesa. Meetings begin at 7:00 P.M.

Valley Computer Club. Monthly meeting at 7 pm, first Wednesday of month in Burbank Board of Realtors Bldg., 2006 W. Magnolia Blvd., Burbank. All types of micros represented. Contact W.R. Robinson, 11850 Louise, Granada Hills, CA 91344, (818) 368-1383.

San Diego Computer Society. Umbrella organization for over 40 Special Interest Groups (SIGs). Sponsors meetings, newsletters and annual computer fair. Meetings at Mesa College, 7250 Mesa College Drive, San Diego, 11:30-4, third Saturday each month. Contact Membership Chairman, P.O. Box 81444, San Diego 92138, (619) 549-3783. BBS (619) 549-3788.

Consolidated Computer Club. Dues $25 yr. For meeting place and time send SASE to David Nussbaum, 14200 Polk Street, #53, Sylmar, CA 91342-2966, or call (818) 362-9718.

Hughes Aircraft Computer Clubs. This club is for Hughes Aircraft employees only, but the BBS is open to everyone. Upload and download boards for Macintosh, IBM, Atari, Commodore, etc. Each board has its own public message service plus general message board. Contact Bud Grove, 21111 Dolores #146, Carson, CA 90745. BBS (213) 549-9640, 300/1200 baud, 24 hrs., 7 days.

Ventura Personal Computer User's Group. All MS-DOS and PC-DOS machines. Meetings 3rd Saturday 9 am-12 noon, Foster Library, 651 E. Main, Ventura. Contact Mike Regan, President, 301 Dana Point, Ventura, CA 93004, (805) 647-8273.

Micro User's Group — SFV Board of Realtors. Meetings 7232 Balboa Blvd., Van Nuys, 7 pm. third Thursday. Contact Mary Lou Williams, (818) 786-2110 for more information.

South Bay Computer Education Group. Supporting Apple, Atari, Commodore, IBM and compatibles, and TI99/4A. Meeting 2nd Wednesday of each month. Time 7 pm at 3675 Torrance Blvd., Suite 202, Torrance, CA 90503. Contact Jack Ward (213) 530-4879 or Judy Adams (213) 540-5010.

UCLA PC Users Group. IBM PC or compatibles owners welcome to join us on the 2nd Tuesday of the month, 7 pm. Public domain library , SIGs, BBS, seminars and newsletters. NPI Auditorium, UCLA, Westwood Plaza, Level C. For more information call (213) 473-6668.

Citizens Veto. For users with an interest in socio-economic issues who might want to try their equipment in working a model of a new approach. Primarily graphics and numbers, minimal text. Ewald O. Schlachter, (415) 452-0151.

ICCA (Independent Computer Consultants of America. A nonprofit national association dedicated to the independent computer consultant. Its goals are to promote professionalism within the industry, increase awareness of ICCA to clients, and provide group benefits to members. Meets at Revere House, Tustin, 2nd Thursday, 6 pm. Contact Bill Creel, membership chairman, ICCA-OC, P.O. Box 3067, Santa Ana 92703, (714) 666-1981.

LAC-BUG (Learn About Computers — Beginner's Users Group. All computer owners and prospective owners eligible, ages 3 to adult. Educational materials and hands-on training included with membership. 24 hour telephone: (213) 372-8909. Mailing address: 6506 Arizona Avenue, Suite 127, Los Angeles, CA 90045.

Association For Women In Computing. L.A. Chapter meets on the second Wednesday of the month, 6:00 pm, at the Proud Bird Restaurant, (near LAX). Contact the Program Chair at P.O. Box 3966, Torrance, CA 90510. (213) 657-0327.

Southern California Geneological Society Workshop. Meets the fourth Saturday of the month, 4:00-6:00 pm, at the SCGS Library, 122 S. Golden Mall (rear), Burbank, CA 91502. A self-help group to provide a forum for information and experience exchanges on the use of computers in geneology. Contact W.R. Robinson, SCGS, P.O. Box 4377, Burbank, CA 91503. (818) 368-1383 or (818) 843-7247.

NATIONAL/ INTERNATIONAL

Network Users Association. 2111 Eisenhower Ave., Suite 400, Alexandria, VA 22314. (800) 638-8510 or (703) 683-8500.

TPUG World's largest Commodore Users Group. $25 annual membership entitles you to access to library of public domain software for C-64, VIC 20, PET, CBM, SuperPET, B-128. Coming soon Plus 4, C-16, C-128. New disks added each month. Also TPUG Magazine (10 per year), free access to TPUG's Bulletin Board Modem System, 24 hours, 7 days. TPUG Inc., 5300 Young St., Willowdale, Ontario, Canada M2N5R2, (416) 733-2933.

Apple Co-op. 290 SW 43rd, Renton, WA 98055. (201) 251-5222.

JUG (Jefferson State Computer Users Group). Many SIGs, newsletter. Dues $5.00 year, some SIGs additional. Contact JUG, P.O. Box 457, Gold Hill, OR 97525-0457.

MicroPro Users Group of America. National group with over 200 members worldwide. Dedicated to supporting MicroPro products, especially WordStar and InfoStar, for any hardware. c/o Procyon Associates, 140 Riverside Drive, New York, NY 10024. (212) 595-4811.

Golden Apple Club, Apple II and Macintosh. Contact Stefano Minotto, Golden Apple Club, Riviera Tiso da Camposanpiero, 26, 35100 Padua, Italy.

F.O.G. 15,000 member group supporting all CP/M users. Dues of $24.00/yr. include 60-80 pg. FOGHORN monthly's access to 270+ disk library, 40+ RCP/M systems, and back issues; and a technical support hotline. All meetings conducted by 140+ local groups. Gale P. Rhoades, P.O. Box 3474, Daly City, CA 94015, (415) 755-2000.

Getec s.r.l. Contact Silvio Esengrini, Via dei Guarneri Nr. 24,-20141 Milan, Italy. Phone: 39/2/5696502, 39/21 5694185.

Italtel S.p.a. Contact Michelangello Sala, C.Na, Castelletto, 20090 Settimo Milanese, Milan, Italy. Phone 39-2-4388-4288.

PLUG (The Plus/4 Users' Group). Dedicated solely to support of the Commodore Plus/4. No regular meetings, 200 members in US, Canada, Mexico, and Europe. Newsletter, public domain software library. P.O. Box 1001, Monterey, CA 93942.

KAPPA (Memphis Kaypro Users Group). Meetings at 2 pm, 1st Saturday of the month, Room 2, Jennings Hall. Contact Hugh Lamar, 5983 Macon Cove, Memphis, TN. (901) 377-4140.

The AppleWorks Users Group (TAWUG). c/o Regional Rep, 27421 Berenda Way, Hayward, CA 94544, (415) 887-7499.

FORTH Interest Group, International Office. P.O. Box 8231, San Jose, CA 95155. For further information call (408) 277-0668.

Apricot User Group (APRICUG). Box 98, Malverne, NY 11565.

Spellbinder Users' Group has an international newsletter with useful macros written by members, advice on new applications, news, and word-processing problem solving. All experience levels. California members welcome. Write P.O. Box 14, Newark, Notts, England NG24 4TP; telephone (0636) 77313; telecom Gold/Dialcom Mailbox 72: MAG95610.

National TeleVideo Users Group. Meets 7:30 pm, 3rd Thursday, 1170 Morse Ave., Sunnyvale. P.O. Box 22007, San Francisco, CA 94122. Call for info — David, (415) 753-1552.

Apple Fontrix Club. Monthly newsletter. P.O. Box 29857, Thornton, CO 80229-0857.

N.A.B.V.I.C.U. - The National Association of Blind and Visually Impaired Computer

PL30 Turbo
PL30 Turbo
PL30 Turbo
Infinity
Infinity
Macintosh
Macintosh II

Now including LaserSpeed and Backprint™ Software — a $158 value!

Which Peripheral Land system do you need? Ask your dealer to help you make the right choice.

Peripheral Land's Turbo Drives are the world's *fastest* for the Macintosh . . . but don't take our word for it.

Lots of manufacturers claim outstanding speed. But can you believe them? Testing independently, three leading Macintosh magazines found out that none are faster than Peripheral Land's. You can trust *them:*

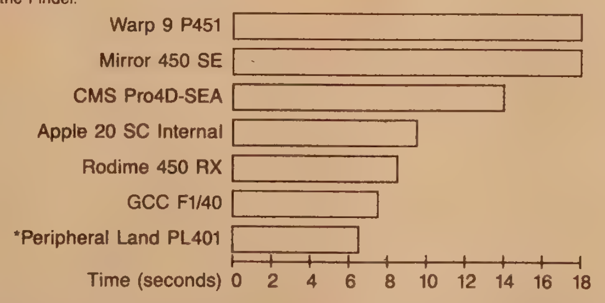
MACWORLD: "The Peripheral Land Drive is the hot rod of the group, a good choice if you need top performance right away."

MacUser: "Peripheral Land's hard disk drives are ranked #1 in speed, reliability, storage capacities and aesthetics."

MacWEEK produced this chart demonstrating how Peripheral Land beat out every other manufacturer:

HARD DISK PERFORMANCE

This graph charts read/write performance for different disks used with a Macintosh SE (1 Mbyte of RAM, cache turned off). Figures shown are times to duplicate a 766-Kbyte file in the Finder.

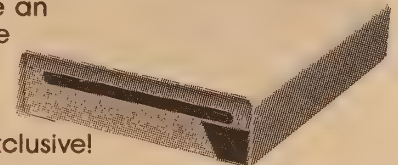


*The PL40I has been replaced by the PL50i since publication. The new drive is even faster!

PLI'S EXTERNAL HARD DISKS — our PL 30, 50, 100, 172 and 230 Turbo Drive Systems — provide a combination of speed, reliability, software and value that has earned them the top spot among SCSI hard drives.

Access time for PLI's external drives is as fast as 18 milliseconds. But our Turbo Software (featuring a disk technology called 1:1 Interleave) makes them even faster — three times as fast as some competitive drives that cost more.

PLI'S INTERNAL HARD DISKS are 30% faster than Apple's own internal drives, and up to 300% faster than other manufacturers'. These 30, 50 and 65 MB drives are carried inside the Mac SE or Mac II, saving valuable desk space and providing instant portability. We also include an external enclosure to house the SE's second floppy drive that is replaced by the hard disk. Another Peripheral Land exclusive!



With every Peripheral Land drive you get these new software programs absolutely free:

- **LaserSpeed**™— from Think Technologies. A new laser printer spooler with built-in cue management (a $99 value).
- **Back Print**™— a new Imagewriter spooler from Cortland Computer (a $59 value).

PLI's Turbo Software also gives you more utilities than any other hard drive: Partitioning with password protection, HFS/MFS support, DA volume mounter, file locator, and a powerful backup utility. They all serve to make your Mac run faster, easier and more effectively.

And the reliability of the units is also unbeatable: Every one of PLI's hard drives is completely tested and burned-in before shipping and carries a full one-year warranty.

Aren't Peripheral Land hard disks your best buy anywhere? We think it's obvious, but don't take our word for it. Ask your dealer. The best ones know us well. They are also familiar with our Infinity™disk drives and our tape backup stystems.

If your dealer doesn't have Peripheral Land products, he'll be glad to call us for you.

You *can* take our word for that.

PERIPHERAL LAND, INC.
47800 Westinghouse Drive
Fremont, CA 94538
(415) 657-2211 TELEX 650305-1733MCI

DEALERS

TIC COMPUTER

2/

DEALER PROGRAM ON ALL DF

2 YEAR WARRANTY • 3

GREAT REASONS T

- Stability & Reliability
- Large Product Selection
- 10,000 Square Foot Warehouse
- Professional Sales Staff

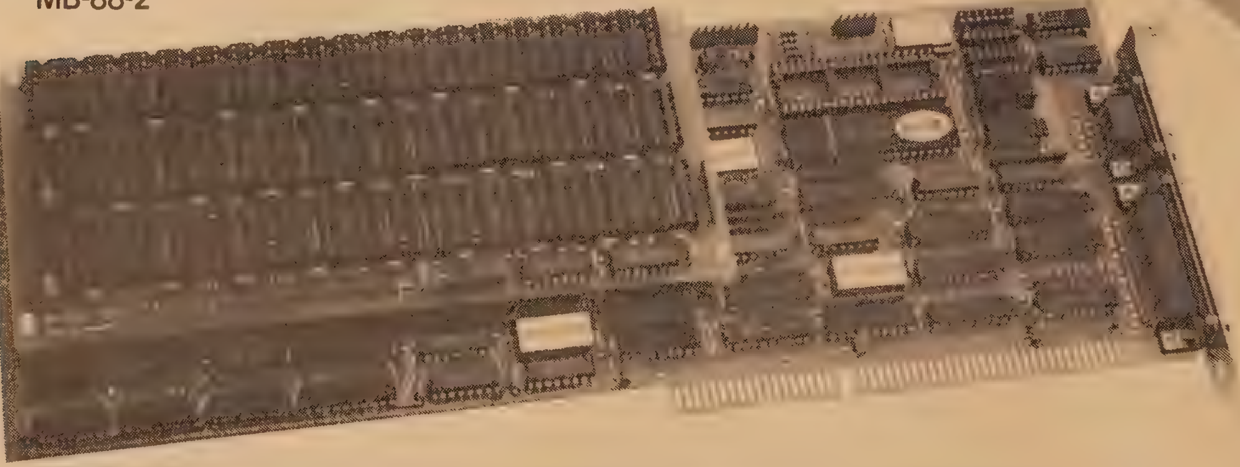
OUR

Diamond®

DFI BOARDS

MAIN BOARDS
DFI-MINI 286
MB-88-2

This Multi-Function Board is just one of the complete line of DFI products we carry.



MEMORY
MEMO-576
MEMO-2000X
MEMO-2000A

COMMUNICATION
MD-1200
MS-400
MS-422
MU-440
DFINET-200

MULTIFUNCTION
MF-100
MF-3000/3001
DIAMOND PLUS MULTI I/O & 2 MB EMS

I/O CARDS
DIO-100A MULTI I/O CARD
DIO-200X MULTI I/O CARD
DIO-200A MULTI I/O CARD
DIO-300 MULTI I/O CARD
DIO-500 MULTI I/O CARD
MIO-100 MULTI I/O CARD & 360KB FDDA
DIAMOND PAK MULTI I/O & 360KB FDDA & MONO GRAPHICS
SUPER I/O MONOCHROME GRAPHICS & MULTI I/O

STORAGE
DCA-100
FDDA-100
FDDA-200
FDDA-300

DISPLAY
MG-150
MG-132
CPG-400
VD-100
EG-2000

TIC
COMPUTERS, INC.
1636 S. Stadium View Ave.
Anaheim, CA 92806
TEL:
(714) 937-0370
FAX:
(714) 937-0575

DEALERS

S ANNOUNCES

30

BOARDS AND QUIMAX MONITORS

DAY INSTANT REPLACEMENT

BUY FROM TIC

- Institute Certified Technicians
- Low Prices
- Complete Dealer Support
- Prompt Shipping

TH YEAR

Quimax

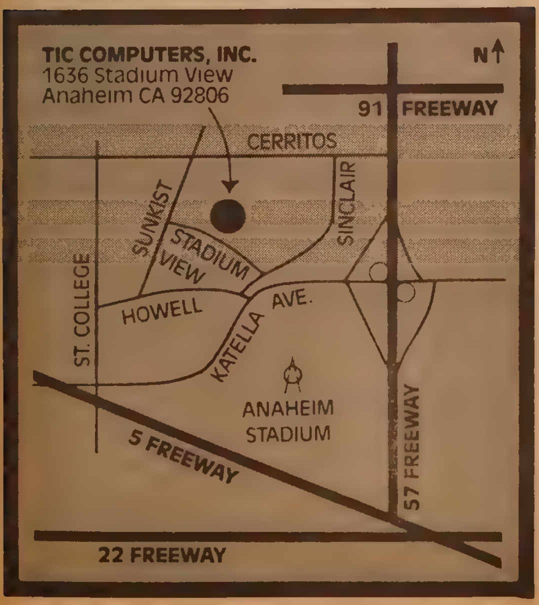
MONITORS

COLOR
DM-2214
PX-22
DM-1502

MONOCHROME
DM-12 and DM-14
DM-14
DM-15
DM-3014
DM-1400

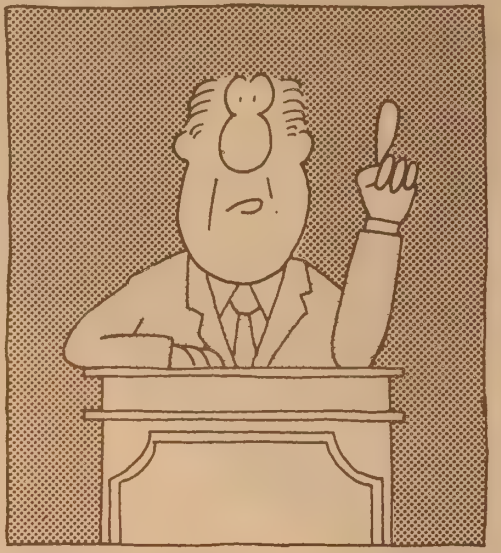
The above Quimax Monitor is representative of their fine product line.

CENTRALLY LOCATED


TIC COMPUTERS, INC.
1636 Stadium View
Anaheim CA 92806
N
91 FREEWAY
CERRITOS
SUNKIST
SINCLAIR
STADIUM VIEW
ST. COLLEGE
HOWELL
AVE.
KATELLA
ANAHEIM STADIUM
5 FREEWAY
57 FREEWAY
22 FREEWAY

YOUR ONE STOP DEALER SOLUTION

"What This Country Needs Is A 175 Watt Compaq™ Portable Power Supply...



...And MICROTEST Has It For You."

We understand your demands. Unfortunately your Compaq™ portable power supplies cannot often meet them. MICROTEST will upgrade your supply allowing maximum output of 175 watts and it will support a hard disk. Contact your MICROTEST representative today at (714) 545-3836.

µtest

MICROTEST
3015 S. Oak, Santa Ana, CA 92707
In California (800) 558-1108

Micro Computer Repair Specializing in IBM™ and COMPAQ™

IT'S NO SUNDAY DRIVE

The DTM-885™ is Tough, Fast and designed for the Long Haul.

At 85mb, with 30ms Access Time the DTM-885 gets you to the Storage Level you want, at a Price you can Afford.

Free Formatting Software
1 Year Factory Warrantee

SPECIAL INTRODUCTORY PRICE

Call Today for Pricing and Info.
Dealer Inquiries Welcome

HIGH SEAS SALES CO.
818-905-SEAS

DTM-885 IS A TRADE-MARK OF DATA-TECH MEMORIES MFG. INC.

Users. The purpose of this group is to gather information that will assist the blind or visually impaired person in utilizing the enormous potential of computers. It supports **Compu-Help**, a menu driven database-bulletin board programmed for use by the blind and visually impaired. It is available 24 hours a day, 7-days a week, 300/1200 baud, 8 or 7 bits, even or no parity, 1 stop bit. (916) 786-3923. Compuhelp is also available on disks. For more info, contact Otto C. Haiungs, Chief Executive Officer, Sysop, at P.O. Box 1352, Roseville, CA 95661-1352. (916) 783-0364.

28 Barbary Lane. Meets at 121 13th Ave. East, Seattle, WA, Fridays 8:00 pm. Contact A. Madrigal, (206) 323-2828. BBS: (206) 323-2828.

MICROenvironment: Microenvironmental Information Consortium For Researchers Overseas. (800) 323-7611. World Headquarters, 712 Avery Rd. W. Winlock, Washington 98596, USA. Micro on MCI mail. ECONET & WELL. TELEX number 6502928733 via WUI.

American Computer Users Temporarily in Europe (A.C.U.T.E). Going overseas or already there? We are a users group dedicated to helping you better adjust and understand how to survive in the overseas environment with your computer system. We show you how to find things you will need at reduced member prices. We also consult firms and developers on how to make software more acceptable to the international market. We do foreign language translation of computer software and provide referral services. Further information available by mail: A.C.U.T.E., Postfach 4, D-8818 Lehrberg, West Germany.

Folklife Terminal Club. Almost Free Software. An international Commodore computer users group, with members in more than twelve countries, has made its software library available to other user groups and individuals. The club has issued new catalogs of software from its archives which contain more than 6,000 public domain programs. The programs are stored on diskettes and are usable in various configurations of PET, CBM, VIC, C-64, PLUS 4 and C-128 computers. The software itself is free. The first diskette that should be ordered is the new "CATALOG DISK" which contains an automatic disk cataloging program, a listing of all the available programs, complete instructions and Associate Membership in the club. There is a copying and mailing fee of $15 per diskette. Please specify which computer and disk drive you have. Contact Folklife Terminal Club, Box 555-DN, Co-op City Station, Bronx, NY 10475.

Miami PC User Group. Meets at 16400 N.W. 32nd Ave, Miami, FL. Second and fourth Wednesdays at 8:00 pm. Contact Jeffrey Feinberg, 2500 E. Hollandale Beach Blvd., Hollandale, FL 33009. (305) 457-7744.

USER GROUPS

AT&T

AT&T PC6300 Users' Group. Meetings at various locations—contact BBS for latest information. Or write Eric Levinson, P.O. Box 7364, Burbank, CA 91510. BBS (818) 954-0530, 300/1200, 8-N-1, 24 hours.

ORCA - Orange Riverside Counties AT&T 6300 UG. Meetings bimonthly, second Saturdays, 11:30 am, at 2144 Michelson Drive, Irvine. Contact Chuck Patten, 1220 Page Circle, Corona, CA 91720, (714) 851-0119, ext. 234.

ADAM

Adam Users of Southern California. Come and keep the ADAM going. We have access to some of the people who developed software for ADAM and we are going to create a base for tips, reviews, and a BBS. Get on line with ADAM. Meetings at Airport College Center, Sepulveda and Century, 4th Sunday, noon. Contact Harvey Klein, 1736 S. Bedford, LA, (213) 553-1062 or Paul Shecter, 5545 Lindley, Tarzana.

ALPHAGRAPHICS

Alphagraphics. Contact Stella or Jim Muller, 16425 Bernardo Ctr. Dr., San Diego, Ca. 92128, (619) 451-2250.

AMIGA

Amiga Friends (AF). Contact Russ Kavanagh, (714) 898-2947. Call for more information, we'll see you there!

San Fernando Valley Amiga User Group (SFVAUG). Meets 2nd Thursday of the month, 7-10 pm, at American Legion, 7338 Canby Ave., Reseda. We've got demos, SIGs, newsletter, PD library, disk of the month, ANSWERS. Bring your AMI, we have lots of room now! Contact Randy Likins, (818) 709-0932.

Bits & Pieces Amiga Group of Anaheim. Meets every Tuesday 6:30-10 pm at 1130-A N. Kraemer Blvd., Anaheim, CA 92806. C-64, C-128, Amiga. Public domain software, technical help, guest speakers, much more. Contact John Callaci or Mike Dalton (714) 630-8644/630-8711 for information.

Color America. Amiga SIG meets 1-3 pm on the third Saturday of the month at Rosemead Community Center, 3936 N. Muscatel Ave., Rosemead. For information contact Mark Randall, 2227 Canyon Rd., Arcadia, CA 91006, (818) 355-6111.

Amiga Tech Users Group #1. Meets 4th Tuesdays, 7 pm, University Union, Cal Poly Pomona. Contact Mark Randall, (818) 355-6111. Call for more information, we'll see you there!

Amiga Tech Users Group #2. Meets at Rosemead Community Center, 3936 N. Muscatel Ave., near Valley Blvd., Rosemead, 1 pm, 3rd Saturday of the month. Contact Mark Randall, (818) 355-6111. Call for more information, we'll see you there!

Inland Empire Amiga User Group (IEAUG). Meets 7 pm, 3rd Tuesday of the month, California School for the Deaf, 3044 Horace St., Riverside. Contact Paul Corbet (714) 684-6245. Call for more information, we'll see you there!

LA Amiga Users Group (LAAUG). Meets 3rd Wednesday, 7:30 pm, Veterans Memorial Auditorium, Culver and Overland Blvds., Culver City. Call (213) 387-3698 for more information. We'll see you there! BBS: (213) 559-7367.

West Side Amiga Users Group (WAUG). Meets 2nd Wednesday, 7:30 pm, John Adams Junior High School Cafeteria, 16th and Ocean Park Blvd., Santa Monica. Call (213) 451-0713, during the day, for more information. We'll see you there!

Apple/Valley Computer Club. Member interests include Apple, Amiga, IBM and others. Meetings are held on the 2nd Wednesday of each month, 7:30pm, at Valley Presbyterian Hospital, meeting room #3, 15107 Van Owen, Van Nuys, CA. For more info, contact Dr. William H. Trent, 6502 Kester Avenue, #7, Van Nuys, CA 91411, (818) 988-1752.

Ventura Amiga Users Exchange. (VAUX). Amiga users group for Ventura County. Meetings held on the second Monday of each month, 7:30 pm at the E.P. Foster Library, 651 Main Street, Ventura. Call (805) 646-7121.

AMSTRAD

West LA Amstrad. Meets every fourth Tuesday, 8:00 pm at Venice High School. Call (213) 397-7981 for further information.

APPLE

Original Apple Corps. First Apple group ever. SIGs for AppleWorks, Telecommunications, Educators, Macintosh. Meetings in the Santa Monica Mall, second Sunday of the month, 3rd floor Community room, 12 noon. Contact Rich Rollons (213) 378-0707, or Fred Duffy, (213) 396-5515.

The Orange Apple Computer Club meets 9 am-12 pm the first Saturday of each month in the Science Hall at Orange Coast College, Costa Mesa. We have over 700 members, ranging from beginners to certified Apple developers, and a large Apple II public domain software library. There are several very active special interest groups which include Apple III, educators, Apple II, modem and investors. For further info call (714) 770-1865.

Tri City Apple User's Group (Glendale, Burbank, Pasadena). Speakers, product demos, public domain library and friendly experts ready to answer any Apple II question. Meetings are scheduled the third Thursday of the month at Casa Colina Neurological Learning Center, 50 North Hill St., Pasadena at 7:00 pm. Contact Marie Kaden at (818) 846-6682.

North San Diego Apple Club. Meets 1st Tuesday of each month at Meadowbrook Middle School, Meadowbrook Lane, Poway, 7 pm. Contact Bill Walker (619) 579-9649 or Chuck Newby (619) 566-0387, P.O. Box 75, Poway, CA 92064.

SD Alllers. Want to start Apple III user group in San Diego area. Contact James Fair, P.O. Box 1592, Lakeside 92040, (619) 561-3270.

Applejacks of the Inland Empire. Primarily for Apple II users. Meets first Wednesday and third Thursday of the month, 7-9 pm, at Norman Feldheym Central Library, 555 W. 6th St., San Bernardino. Contact Scott Zehm at (714)883-2234 for information, or write Applejacks, P.O. Box 23025, San Bernardino, CA 92406.

Appleholics Anonymous of Ventura County. Software library, club BBS, newsletter, hardware and software demos. 150 members. Meetings sometimes vary—call to verify (805) 482-3501, 484-2611, 659-5326, 985-9781. Meetings 3169 Telegraph Road, Ventura, 9:30 am, usually 2nd Saturday.

Apple/Valley Computer Club. Member interests include Apple, Amiga, IBM and others. Meetings are held on the 2nd Wednesday of each month, 7:30pm, at Valley Presbyterian Hospital, meeting room #3, 15107 Van Owen, Van Nuys, CA. For more info, contact Dr. William H. Trent, 6502 Kester Avenue, #7, Van Nuys, CA 91411, (818) 988-1752.

The Driveway Group Ltd. User Group. Meets at the Bellflower Public Library. Time and date varies. We are forming a new club! Deals mainly with special interest programmers and software. We need members! We need to get started! Phone (213) 867-7724 for information.

APRICOT

Apricot Roundtable Group of Hapless Hackers (ARGHH!) An Apricot user's group is forming in east Long Beach, open to any Apricot, XI, F1, F2, F10 or FP user, or anyone else with MS- or PC-DOS and 3½" disk drives. Phone Jim Bliss at (213) 425-6302. Meetings 7-10 pm, 3rd Wednesdays or at such other time as membership decides, at 7215 Killdee St., Long Beach, CA 90808.

ASHTON-TATE

dBUG-dBASE Users Group. For all levels of dBASE users from beginners to expert. Meets 3rd Monday each month, 7-9 pm, Blue Cross Bldg., 21555 Oxnard, Woodland Hills. For more info contact Bruce Ascough, (818) 789-0723.

dBASE III SIG of UCLA PC Users Group. Meets once per month in Santa Monica—date varies. Contact Tom Rombouts, 1428 N. Curson #6, LA, CA 90046, (213) 874-7471.

dVALLEY dBASE Users Group. Largest and most active dBASE group in So. Calif. Meets 4th Monday of the month in Van Nuys. Large meeting room with plenty of parking. Dedicated to dBASE and its add-ons, all levels. Large cataloged library of programs and routines. Exciting group learning projects. "fix-it-session" at every meeting, plus speakers and demos. For information contact Louie Astorga, President, c/o Real Estate Services, P.O. Box 7140, Canoga Park, CA 91304-7140. (818) 998-3210.

ATARI

Atari Computer Association of Orange County (ACAOC). Join one of the biggest Atari user groups in Southern California. Monthly magazine, large public domain library, and club BBS. Dues $24.00/year, $18.00 for non-attending out-of-town members. Meetings at Golden West College, Room 131, Huntington Beach, 1 pm, fourth Sunday of the month (ST meeting same time and place on second Sunday). P.O. Box 9419, Fountain Valley, CA 92728 or (714) 838-3099 for more information.

West LA Atari Users Group. Come join fellow Atarians! Dues are $25.00/year. Newsletter, P/D library, ATR-Sig, discounts, guest speakers. Please call for directions to meeting room! If you're reading this, you belong with us. Meetings first and third Wednesday of the month, 7:30 pm, Lincoln Park, Santa Monica, Wilshire & Lincoln. Contact Bill Skurski (213) 552-4739.

Los Angeles Atari Computer Enthusiasts (LAACE). Join Los Angeles' largest and oldest Atari Users' Group, now in our 6th year. Enjoy our monthly meetings and newsletter. Participate in our educational SIG (Special Interest Groups) seminars and meetings. Learn how to get the most out of your Atari; access our hundreds of public domain programs; benefit from the help and experience available from our experts. Come as our guest on the 1st Tuesdays of the month (2nd Tues if holiday occurs in 1st week) at 7:00 pm at Granada Hills High School, 10535 Zelzah Ave., Granada Hills, CA. For full benefits, including member access to our 10 meg BBS, dues are $20/yr ($25 for entire family). Write P.O. Box 7752, Van Nuys, CA 91409 (include your phone number) for additional information. BBS: (818) 700-1652.

Santa Clarita Valley Atari Computer Enthusiasts (SCV-ACE) invite you to join us. Meetings are the first Thursday every month from 7 to 9 pm at the Moose Lodge, 18000 W. Sierra Hwy., (1/2 mile north of Soledad Canyon Road), Canyon Country. For info call Bob at (805) 259-6540.

Atari Computer Enthusiasts Network (ACENET). Umbrella group representing many Southern California Atari groups. If you can't locate a user group in your area, contact John Tarpinian at 6055 Cahuenga Blvd., #2, North Hollywood, CA 91606, (818) 760-1831.

Hooked on Atari Computer Keyboard Society (HACKS). Meetings on the first Saturday of the month in the Burbank area. For more information contact John Tarpinian, 6055 Cahuenga Blvd., #2, North Hollywood, CA 91606, (818) 760-1831.

AA-Atari Users Group. Meets at Upland Public Library, 450 N. Euclid Ave. Atari 400, 800, XL/XE group meets second Tuesday, 6-9 pm. Call Juan Valdes, (714) 980-6841 for more info. 520/1040ST group meets fourth Thursday 6-9 pm. Call Jay McCarthy, (714) 829-8722 for more information.

MAST—Mid-Cities Atari ST. Meetings at 9025 E. Artesia Blvd., Bellflower, first Sunday, 7 pm. Contact Jane Hughes, 9701 E. Artesia Blvd., Bellflower, (213) 867-0626.

South Bay Atari Computer Enthusiasts (S.B.A.C.E.). Meets 2nd Tuesdays, 7:30 pm, VFW Hall, 1865 Lomita Blvd., Lomita. Meetings consist of guest speakers from software and hardware suppliers, demos by members, q & a periods, along with current Atari rumors. Newsletter, published 6 times a year, included with $20/yr membership fee. Write S.B.A.C.E., P.O. Box 83668, Los Angeles, CA 90083, for more information, or call Dick Reaser, (213) 645-7063.

AUTOCAD

AutoCAD Los Angeles Users Group. Meetings fourth Thursday of the month (except November and December—Meetings Nov. 20 and Dec. 18), Church of Religious Science, 260 North Pass Ave, Burbank. Contact Tesfaye Abagaz, (818) 843-5770 (work).

COMMODORE

San Diego Commodore Users Group. Meets third Wednesday, 7 pm, 2557 3rd Ave. (Women's Club), San Diego. For all Commodore machines. Contact Jane Campbell, (619) 584-2872 for more information, or write: P.O. Box 86531, San Diego, CA 92138-6531.

San Fernando Valley Commodore Users Group. Meets 4th Wednesday of the month, 7:00 pm, at Mercury Savings, Sherman Way & Sepulveda.

San Luis Obispo Commodore Computer Club 1766 9th St., Los Osos, CA 93402. (805) 528-7475 BBS.

The Commodore Users Group - San Juan Capistrano. This group of C64 users meets the second Saturday of every month from 9:00 am till 12:00 at Great American Federal Savings and Loan, 32232 Camino Capo, San Juan Capistrano. For info call 496-5745.

Orange County Commodore Technical User's Group C-TUG. Orange County's Commodore user group. Club newsletter, two 300/1200 baud BBSs, door prizes, SIGs in Comal, DOS protection, data bases, wpros, and BASIC. Custom software and ROM chips, and just plain good times. Meetings at Mercury Savings and Loan, 4th and Newport, Tustin, fourth Sunday of the month, 10:30 am. Contact Ellis L. Higham, corresponding secretary, P.O. Box 8342, Orange, CA 92664, (714) 554-9222.

Hollywood User Group (HUG) for Commodore computers. Meets 2nd Saturday of the month at Plummer Park, Conference Room, 7377 Santa Monica Blvd., West LA at 12 noon. Contact HUG BBS (213) 874-8256 (24 hrs) or write HUG, P.O. Box 38313, Hollywood, CA 90038.

Southern California Commodore Users Group. Learn more about your Commodore 64. Extensive public domain disk library. Meet at Mid Cities Bank in Gemco shopping center in Bellflower, on the corner of Artesia and Lakewood Blvds. 7 pm, 3rd Tuesday of every month. Contact Dan Klaffke, 11018 E. Rosecrans Ave., Suite 203, Norwalk, CA 90650. (213) 864-2874.

C-128 West UG. User group for owners of the Commodore C128, from beginner to advanced; PD software available. New group still assessing the needs and interests of members. Intend to network with other user groups on C128 software. Meetings 2nd Tuesday, 7:15 pm, McKinley School in Santa Monica, Santa Monica Blvd. and Chelsea. Contact Don Campbell (213) 828-9308.

Inland Empire IBM/C64 User Group. Major subjects are local area networks, small business software, data communications. Send SASE for free newsletter with dates and software library. Contact Winfried Hofacker, P.O. Box 988, Chino Ca 91708-0988.

Commodore Creations Users Group (CCUG). We offer library, newsletter, and other services; upcoming BBS; soon to be member of Commodore World. Meets 2nd or 3rd Sunday of each month 2-4 pm. Membership dues $26 per year. Call or write for info: Brian R. Klotz, 1135 Coronet Ave., Pasadena, CA 91107 (818) 351-8198.

Back-Country Commodore Club. Meets first Thursday 7 pm, Ramona Lutheran Church on 14th St. Check us out for relaxed, informative group discussions. We're here to help those with problems and to promote better uses of Commodore 64s, 128s, and Amigas. Contact Gerry White at (619) 789-3209, 511 14th St. #D-13/P.O. Box 373, Ramona, CA 92065. Meetings at 617 16th St., Ramona, CA 92065, 7 pm, 1st Thursday each month.

General Dynamics Commodore Computer Club. Meets third Tuesdays, 4:30 pm, Convair Rec. Assn. room C. Commodore 64 and 128 only. Contact Al Wilson, (619) 429-6790 for information.

C.U.B.E. Commodore Users, Buffs, and Enthusiasts meet first and third Mondays of each month, 7:30 pm, East Side Christian Church, 668 Obispo, Long Beach. Contact Ted Lynch, P.O. Box 20288, Long Beach, CA 90801. (213) 435-4815.

Com-Pacs. Meetings and/or copies of public domain software and discussion of problems. New computer C64/128 technologies. Sales and swaps of equipment. Meetings at 2354 Elmgrove St. Los Angeles, CA, Saturdays, 3 pm. Contact Lon Damiani, (213) 222-2277.

PLUG (The Plus/4 Users' Group). Dedicated solely to support of the Commodore Plus/4. No regular meetings, 200 members in US, Canada, Mexico, and Europe. Newsletter, public domain software library. P.O. Box 1001, Monterey, CA 93942.

Pacific Computer Club (Commodore). Meetings 391 S. Madison, Pasadena, 2nd Thursday, 7 pm. Contact Norman Sauppe, (818) 792-9840.

FCUG/SixtyFourum. PD library, newlsetter, meeting 3rd Saturdays, 8:30 am. Contact George Bearden, P.O. Box 16098, Fresno, CA 93755, (209) 291-7053. BBS (209) 431-6288.

Central Coast Commodore Users Group. Meets 3rd Tuesday of each month. Contact Gilbert Vela, 4237 Plumeria Ct., Santa Maria, CA 93455. CCCUG BBS (805) 934-2216, 24 hrs/7 days, 300 baud, Punter BBS protocol for downloads.

Diamond Bar User Group (DBUG). The Diamond Bar User Group is dedicated to the Commodore line of computers, C64, C128, and the Amiga. The club has a large public domain software library base, especially Commodore CP/M. Free raffles, technical discussions, software demonstrations, and the monthly freebie disk can be found at most any meeting. Meetings 2nd and 4th Wednesdays, 7 pm, Diamond Bar Library, 1061 S. Grand Ave., Diamond Bar, CA. Contact David Dietzel, (714) 947-1882 for more information.

South Orange County Commodore Programmers and Users (CPU). Meetings at Great American Savings, 23688 El Toro Road, El Toro, third Saturdays, 9 am. Contact Don Gribble, President, 25401 Champlain Rd., Laguna Hills, CA 92653, (714) 830-2430 or (714) 855-8320.

West Orange County Commodore User Group. Meetings 1st Sundays, 1 pm, Mercury Savings, Buena Park, corner of Valley View and Lincoln. Write for info: P.O. Box 6441, Buena Park, CA 90622; or call Mark Stanford, (714) 772-4182 or Art Collins (714) 821-0195.

Bits & Pieces Amiga Group of Anaheim. Meets every Tuesday 6:30-10 pm at 1130-A N. Kraemer Blvd., Anaheim, CA 92806. C-64, C-128, Amiga. Public domain software, DOS classes, technical help, guest speakers, newsletter and much more. IBM group meets first and third Saturdays of the month at 10:00 am to 2:00 pm. Sponsored by Transnational Electronics. Contact John Callaci or Mike Dalton (714) 630-8644/630-8711 for information. BBS: (714) 630-5619.

The Pasadena Commodore Computer Club meets the first and third Wednesday of the month at 7 pm in the Circadian Room of the cafeteria on the campus of Pasadena City College, SE corner of Colorado and Hill. For more information write to PCCC, P.O. Box 1163, Arcadia, CA 91006, or call (818) 447-2212 after 2:30 Pacific time.

Osborne Komputer Owners Klub (OKOK) is a microcom-

NEW TECHNOLOGIES
Where Tomorrow's Technology Begins

20 Mb 10 MHz XT System

Fully IBM Compatible
Switchable Clock Speed (4.77/10 MHz)
Zero Wait State
640 K RAM w/Eight Expansion Slots
Floppy Drive Controller
One 360 K Floppy Drive
Mono. Graphics Card w/Printer Port
HiRes Monochrome Monitor w/Stand
150 Watt Power Supply
AT Style Keyboard w/Tactile Feedback
Key Lock Case w/Turbo & Reset Button
20 Mb Hard Drive w/Controller (ST-225)

$789

286 10 MHz-40 Mb System

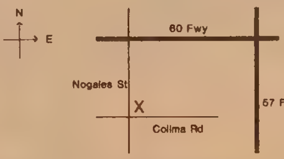
10 MHz 286 Mother board
1 Mb RAM
1.2 Mb Floppy Drive
360K Floppy Drive
WA2 Controller (Floppy & Hard Drives)
K101 Keyboard (Tactile)
Samsung Amber Monitor (Swivel Base)
Monochrome Graphics Card
Keylock Case
200 Watt Power Supply
Multi I/O (Ser., Par., and Game Ports)
40 Mb Hard Drive (Miniscribe 3650)*

$1349
*Seagate ST-251 add'l $85

14 Day "All Your Money Back" Guarantee
One Year Parts and Labor Warranty

Printers
Modems
Floppy/Hard Disks
Add-on Cards
12 MHz Systems
386 Systems

MENTION THIS AD
FOR ADDITIONAL
SAVINGS



NEW TECHNOLOGIES
COMPUTER APPLICATIONS
(818) 964-8646
19065 Colima Road Roland Heights, CA 91748

COMPUTER SWAP™ MEETS
A HIGH TECHNOLOGY FLEAMARKET AND MINISHOW FOR PERSONAL COMPUTING ENTHUSIASTS

FUTURE SWAPS
10:00 a.m. to 5:00 p.m.
L. A. COUNTY FAIRGROUNDS, POMONA
OCTOBER 31, 1987
DENVER MERCHANDISE MART, COLORADO
NOVEMBER 7, 1987
SAN DIEGO COUNTY FAIRGROUNDS, DEL MAR
NOVEMBER 14, 1987
ORANGE COUNTY FAIRGROUNDS, COSTA MESA
NOVEMBER 21, 1987
L. A. COUNTY FAIRGROUNDS, POMONA
DECEMBER 5, 1987
SAN DIEGO COUNTY FAIRGROUNDS, DEL MAR
DECEMBER 19, 1987
L. A. COUNTY FAIRGROUNDS, POMONA
JANUARY 9, 1988
ORANGE COUNTY FAIRGROUNDS, COSTA MESA
JANUARY 23, 1988
L. A. COUNTY FAIRGROUNDS, POMONA
JANUARY 30, 1988
SAN DIEGO COUNTY FAIRGROUNDS, DEL MAR
FEBRUARY 6, 1988
L. A. COUNTY FAIRGROUNDS, POMONA
FEBRUARY 27, 1988
SAN DIEGO COUNTY FAIRGROUNDS, DEL MAR
MARCH 12, 1988
L. A. COUNTY FAIRGROUNDS, POMONA
MARCH 19, 1988
ORANGE COUNTY FAIRGROUNDS, COSTA MESA
APRIL 2, 1988
SAN DIEGO COUNTY FAIRGROUNDS, DEL MAR
APRIL 9, 1988
Denver Special Promotion All spaces are $75 per table prepaid on a first come-first served basis thru 1987

HUNDREDS OF SELLERS
Hundreds of dealers and manufacturers having price wars, personal sellers and exhibits. Millions of dollars worth of hardware, software, supplies books and furniture. Many businesses liquidating inventories at a fraction of their cost
BUY, SELL OR TRADE . . .
Every imaginable computer product from ICs to a complete computer system—new or used. Latest statistics of our buyers show that 98% made at least one purchase averaging $300
FREE COMPUTER SWAPPER ADS
Each paid attendee is entitled to a free 20 word classified ad in *The Computer Swapper.*
SELLING SPACES:
Cost $125 to $300 Call for details.

- DOOR PRIZES
- CONSIGNMENT TABLE
- THOUSANDS OF BUYERS
- ADMISSION:
  $4 IN ADVANCE
  $5 AT THE DOOR

SWAP MEETS
LAST
ONE DAY
ONLY

RK PRODUCTIONS, INC.
P.O. BOX 18906, SAN JOSE, CA 95158
(408) 978-7927•800-722-7927•IN CA 800-252-7927

Coming Soon

All New MicroTimes User Group/BBS Listings

Send Your User Group Listing Now!

Our April 1988 issue, which will be distributed to thousands of personal computer users at the West Coast Computer Faire, will feature all-new listings from California and national user groups, plus information on accessing hundreds of local bulletin boards and conferencing systems.

If you'd like to include information about your board or organization, please use the form on this page (or a separate sheet of paper) to send us your listing. **Please limit your message to 15 words**; longer entries will be edited to that length (address, phone number, parameter settings, etc. each count as one word). If your club has a BBS, please list it on a separate form.

Existing listings will be deleted, so please send us your current information now.

Mail your information to MicroTimes '88 Listings, 5951 Canning Street, Oakland, CA 94609. **Deadline for inclusion in the April 1988 issue is February 1, 1988.**

MicroTimes Free User Group/BBS Listing

Listing

(Include group/BBS name, types of machines supported, contact information, and a brief description. Please limit message to 15 words)

____

____

____

____

For our records (will not appear in listing):

Contact person's name: ____________________

Address: ____________________

Telephone: ____________________

Mail your information to MicroTimes '88 Listings, 5951 Canning Street, Oakland, CA 94609.
Deadline for inclusion in the April 1988 issue is February 1, 1988.

puter user group serving a variety of computers: Osborne, Kaypro, Commodore C128, IBM and clones. As an affiliate of FOG, we serve both MS-DOS and CP/M operating systems. We offer monthly meetings, classes, public domain software library, electronic bulletin board and special purchase opportunities. Meetings second Wednesday of the month, 7:00–10:00 pm. Meetings held at the Altadena Public Library, 600 E. Mariposa, Altadena, CA. Contact Lionel Soracco, (818) 794-3243, or write OKOK, P.O. Box 40429, Pasadena, CA 91104.

Commodore Helpers User Group Of Long Beach.(CHUG). Meets second Saturday of each month, 9:00 am to 12:00 noon at Mercury Savings Bank, 4140 Long Beach Blvd. Dues $12.00 a year. Visitors and families welcome to attend. Support the C64, C128 and Amiga. Q-Link, SIG and more. Newsletter distributed at meeting. Demos and more. We welcome people who need help with their Commodores. Free disk for members at each meeting. Soon to come: area BBS for users and professional software demos. If you have any questions call Rodney Hayes, president, at (213) 863-8420, from 6:00 pm to 10:00 pm, M-F.

Success. Commodore group meets at 18th and Oak, Paso Robles, CA on the second Tuesday of the month at 7:00 pm. Contact Wayne Weichel (805) 238-6294 for information.

East County C64 Owners (ECCO). Meets at Coleman college in San Diego at 7:00 pm on the first and third Fridays of the month. Contact Gary Bell at (619) 561-4245.

GEOS Users. Dedicated solely to helping Commodore owners learn more about GEOS for the C64 and C128. All information and disks exchanged by mail. Membership is $20 per year. Our first GEOS applications diskette and monthly newsletter is included with membership. Please specify which computer and disk drive you have. Contact: GEOS Users, 21634-A Belshire Ave., Lakewood; CA 90716.

CORDATA

Cordata Users Group. Meets 2nd Fridays, 7 pm. 20630 Lassen St., Chatsworth. Contact Alicia Fahey, (818) 709-6202 for information.

CP/M

CP/M SIG. Meets first Sunday of the month, 10:30 am, at Chapman College. Contact Barry Cole (213) 390-3851. BBS: (714) 998-8080.

DEC

DECUS Inland Empire PC-LUG Digital Equipment Computer Users Society. Free to all DEC users; Decmates, Rainbows, Professionals; P/D software; guest speakers; software /applications assistance available; FIDO bulletin board. Meets Cal Poly-Pomona campus, Library Bldg 15, Room 12, 7:30 pm 3rd Tuesday of each month. Contact Jan Snyder, 380 Verona St., Upland, CA 91786, (714) 620-7511 ext. 4376.

DECUS Southern California PC-LUG. Digital Equipment Computer Users Society. Free to all DEC users; Decmates, Rainbows, Professionals, P D software guest speakers software/applications assistance available; FIDO bulletin board. Meets 10:30 am, 1st Saturday of the month, Press Telegram Bldg., 3rd Floor, 604 Pine Ave., Long Beach, CA. Contact Bill Davis, 1457 W. 219th St., Torrance, CA 90501. (213) 827-4600.

DECUS Rainbow Pacific PC-LUG Digital Equipment Computer Users Society. Free to all DEC users; Decmates, Rainbows, Professionals; P/D software; guest speakers; software /applications assistance available; FIDO bulletin board. Meetings at Digital Equipment Corporation, 6101 W. Centinela Ave., Culver City, CA 90230, 7 pm, 2nd Wednesday of each month. Contact Don Braums, 3312 Summertime Lane, Culver City, CA 90230, (213) 202-1784.

EASYBUSINESS

Easybusiness Systems Users Group. CPAs, Consultants, and other business people interested in Computer Associates Easybusiness Systems' Accounting Software. For information, contact Gary Robinson (213) 398-6544.

EPSON

Cursor Club Epson 402 W. Arrow Highway, Suite 6, San Dimas, CA 91773. (714) 559-8361, Bulletin Board: (714) 592-6316.

San Fernando Valley Epson User Group. Meetings at Fallbrook Square Community Room "The Meeting Place" off the Food Court in the new Fallbrook Mall, 6633 Fallbrook Ave., Canoga Park, between Victory and Vanowen. Meets 3rd Wednesday of each month at 7 pm. Contact Pat Denslow, (818) 881-4029 for information.

Epson Users Group of Orange County. 6075 Jeffrey Mark St., Cypress, CA 90630, (213) 414-4817.

Epson Users of San Diego. P.O. Box 87448, San Diego, CA 92138, (619) 560-7604.

High Desert Epson Users Group. 933 Cottonwood Drive, Barstow, CA 92311, (619) 256-3541.

PSC/QX. 2934 Wilshire Blvd., Santa Monica, CA 90403, (213) 453-4535, Bulletin Board: (213) 474-4952.

South Bay Epson Users Group. 1115 Cerise Avenue, Torrance, CA 90503, (213) 328-9916, Bulletin Board: (213) 618-1940.

Epson Computer Club of America. Monthly meeting 2nd Saturday of the month at 10 am, Mercury Savings and Loan, Irvine Blvd. one block east of Newport Ave. Messages Epson West Bulletin Board (714) 630-7104 User area B:15. Monthly newsletter "The Help Key." Contact Roy Boorman, 4021 Winterhaven St., Yorba Linda CA 92686, (714) 524-9483.

Epson User's Group of Orange County. Meets on 3rd Saturday of the month from 10 am to 12 noon at 2111 Main Street, Huntington Beach, CA 92648. Contact Richard A. Petersen. 7282 Mast Dr., Huntington Beach, CA 92646. (714) 536-6979.

FORTH

FORTH Interest Group, Los Angeles Chapter. Meets 4th Saturday, 10 am, Hawthorne Public Library, 12700 S. Grevillea, Hawthorne. Contact Phil Wasson (213) 649-1428.

FORTH Interest Group, Orange County Chapter. Meets 1st and 4th Wednesdays, 7 pm. Call Noshir Jesung for info. (714) 842-3032.

FORTH Interest Group, San Diego Chapter. Meets weekly, Thurs., 12 noon, contact Guy Kelly (619) 268-3100 ext. 4784.

HEATH

Los Angeles HUG (Heath Users Group). A support group for users of Heath/Zenith computers. Monthly speakers, software library, information exchange, newsletter. Meetings open to visitors. Meetings at 2309 S. Flower St., LA 90007, first Thursday of each month at 7 pm. Call Tom Davis for information at (213) 462-2642.

LUV-A-HUG Heath /Zenith User's Group. Meets 2nd Thursday of each month, 7pm, at Heath /Zenith Computers and Electronics, 22504 Ventura Blvd. Woodland Hills, CA 91364. A users group dedicated mainly to the Heath/Zenith line of computers, but anyone interested in computing is welcome. Dues are $12/yr, which includes group newsletter and copying of public-domain software from extensive library of PC-, Z-100, and CP/M compatible software. For more info contact John Rotondi, between 10:00 am and 6:00 pm at (213) 874-9344. BBS (818) 772-0384.

HEWLETT-PACKARD

LA-SCRUG. Hewlett - Packard Series 100 business computer user group. Demonstrations and seminars on HP software and equipment. Meetings at 5161 Lankershim Blvd., North Hollywood, 7-9 pm, 2nd or 3rd Thursday of the month. Contact Dave Mark, P.O. Box 60975, Pasadena, CA 91106, (818) 794-4969.

Hands-On Computer User Society (HOCUS). Meets the 1st and 3rd Thursday of the month, 6:30 pm, at 473 E. Colorado Blvd. Pasadena, 91101. Informal, hands-on problem-solving using various HP personal computers. Contact Dale Thorn c/o Logic Tree Computer Center, 463 E. Colorado Blvd., Pasadena 91101. (818) 440-9279.

PPC Personal Programming Center. Current interests include HP-41c, HP-71b and HP 28c. Meeting times and locations vary and are announced on the bulletin board. BBS number (213) 978-0024. For more information contact Emmett Ingram at (213) 498-2472.

IBM

The Greater South Bay IBM PC Users Association. Any L.A. area PC or compatible owners are welcome to attend these meetings at the TRW cafeteria on Compton Blvd. Meeting time is 7:00 pm on the third Thursday of each month. For info call (213) 532-2123.

Technical Users Group (TUG-NET). For CP/M & MS-DOS PC users. Meets on the first Thursday of each month at 7:00 pm. Valley Plaza Park, Community Room, 12240 Archwood St., North Hollywood, CA. Contact Mike Faith - (818) 994-6567. DOS SIG meets 3rd Mondays, 7 pm, Sears S&L, Van Nuys. Call (818) 701-0512 for information. BBS (818) 882-6045.

UCLA PC Users Group. IBM PC or compatibles owners welcome to join us on the 2nd Tuesday of the month, 7 pm. Public domain library , SIGs, BBS, seminars and newsletters. NPI Auditorium, UCLA, Westwood Plaza, Level C. For more information call (213) 473-6668.

Pasadena IBM User's Group. Meets 3rd Wednesday of each month at Cal Tech, Bridge Building, Room 201. For more info send SASE to Steve Bass, 711 E. Walnut Street #306, Pasadena, CA 91101, (818) 795-2300.

Inland Empire IBM/C64 User Group. Major subjects are local area networks, small business software, data communications. Send SASE for free newsletter with dates and software library. Contact Winfried Hofacker, P.O. Box 988, Chino Ca 91708-0988.

The Foothill Computer Club. An IBM-PC users group. CCCUG — Crescenta-Canada-Compatible Users Group. P.O. Box 1265, La Canada, CA 91011, (818) 790-6672. Meetings 1st Wednesday of the month at 6:30 pm at the Glendale Federal Bank, 2350 Honolulu, Montrose, CA. For newsletter send SASE to above address.

NOCCC Lotus & Business SIG. Subgroup of North Orange County Computer Club. Meets first Sundays at Chapman College in Orange, CA, 11:15 am. Lotus 1-2-3 and business application demos, speakers. Call to verify dates, address: Vance Joachim, (714) 998-8080. P.O. Box 3616, Orange, CA 92665.

The Riverside IBM Computer Club. Meetings at Computerland Riverside, Monday 7 pm. We specialize in software demonstrations, sharing of public domain programs, and mutual problem solving activities. Contact Jimmie E. Heidecke, (714) 685-5407 for info.

Orange Coast IBM PC User Group. A not-for-profit organization open to anyone with or considering the purchase of an IBM PC or compatible computer.

D-Link™

Links Your PC's Together for Sharing of More Resources.

The D-Link Ethernet and Twisted Pair adaptors provide the most cost-effective and easy-to-use local area networks for IBM PC/XT/AT and PS/2, as well as the IBM PC/NETBIOS and Novell's NetWare™ compatible.

- We also provide IBM PC/NET and Novell's NetWare™ package.
- We are now looking for dealers and distributors in your area.

D-Link has these winning features: no dedicated file server, allows peripheral sharing, provides DOS 3.1 record and file locking, is transparent to DOS, provides diskless workstation capability, allows screen monitor, run's Novell's Advanced NetWare™ and is IBM NETBIOS compatible.

LINK COMPUTER, INC.
560 S. Melrose St., Placentia, CA 92670
Tel: (714) 993-6976
Fax: (714) 993-6023

★ IBM PC/XT/AT, IBM PC Network and Token-Ring Network are registered trademarks of International Business Machines Corp.
★ NetWare™ is a registered trademarks of Novell, Inc.

WE'VE MADE DESKTOP PUBLISHING AFFORDABLE

Self Service

Computer Rental (IBM AT or Macintosh SE)
Hourly Charge
$6.00
Image Scanning
Per Hour
$6.00
Color Transfers
Per transfer
$2.00
Laminating
Per lamination
$1.25
Laser Printing (1-5 Pages)
Per page
$1.00
Laser Printing (6-15 Pages)
Per page
$.75
Laser Printing (16-50 Pages)
Per page
$.60
Laser Printing (50 or more Pages)
Per page
$.50
Daisywheel Printing (1-19 Pages)
Per page
$.50
Daisywheel Printing (20 or more pages)
Per page
$.30
Xerox Copies (1-10)
Per copy
$.10
Xerox Copies (11-50)
Per copy
$.07
Xerox Copies (51 or more)
Per copy
$.05
Training
Training (individuals)
Per hour
$15.00

DOCUMENTS:
NEWS LETTERS
ADVERTISMENTS
RESUMES
FLYERS

YOU
NAME IT
AND
IT CAN
BE DONE

VARIOUS
COMPUTER
PROGRAMS

VENTURA
READY SET
GO
PAGEMAKR
ADOLBE

Full Service pricing varies, please ask for a quotation

THE ART DEPARTMENT INC.

1801 A Pacific Coast Highway
Lomita, CA. 90717
(213) 326-6603

Monthly meetings, usually on the last Saturday of the month, consist of one or two guest speakers, a short business session and a period for random access. OCIPUG has public domain and user supported software, a monthly newsletter and a bulletin board. Membership is $20 per year. Meetings at Orange Coast College, Science Hall, Costa Mesa, last Saturday of the month, 9 am–12 noon. Contact Tom Sutro, P.O. Box 6100-211, Costa Mesa, CA 92628, (714) 850-0474.

Valley Computer Club. IBM PC Users Group meets first Wednesday each month. The group is part of Southern California's original computer club. Its purpose is to distribute public domain software and exchange info on the PC. Meetings at 2006 W. Magnolia Blvd., Burbank, 7 pm. Contact Aaron Epstein (818) 769-1837.

Kern Independent PC User Group (KIPUG). Meets the 2nd Thursday of each month beginning at 7 pm at the County Superintendent of Schools Boardroom, 5801 Sundale Ave., Bakersfield. Contact Jim Harrer, P.O. Box 2780, Bakersfield, CA 93303, (805) 395-0223.

Bits & Pieces IBM of Orange County. Meets at 1130-A N. Kraemer Blvd., Anaheim, every Saturday at 10 am. Call John, (714) 630-8644 for more information.

Ventura Personal Computer User's Group. All MS-DOS and PC-DOS machines. Meetings 3rd Saturday 9 am-12 noon, Foster Library, 651 E. Main, Ventura. contact Mike Regan, President, 301 Dana Point, Ventura, CA 93004, (805) 647-8273.

Thousand Oaks Personal Computer Club (TOPCC). Meets fourth Thursday, except November and December (3rd Thursday), at CAL Lutheran Univ., 60 W. Olson Road, Thousand Oaks. 6:30 pm beginners, 7:30 regulars. Group is five years old and has approximately 150 members. Contact Bob Tracy, (805) 482-7092 for more information. BBS: (805) 499-8378.

Southwest PC Users Group. All computer users are welcome. Meetings 3rd Saturday of each month; call for meeting place. Christine Tripp, (213) 935-4105.

Tulare County PC. Meetings at Genesis Computers, 3rd Thursday each month. Call Roger Jenan, (209) 733-8204 for information.

Claremont Computer Club. This club is for any interested IBM PC or compatible users. Meetings start at 7:30 pm on the 3rd Monday of the month. Call (714) 626-2268 for meeting location and information.

Apple/Valley Computer Club. Member interests include Apple, Amiga, IBM and others. Meetings are held on the 2nd Wednesday of each month, 7:30pm, at Valley Presbyterian Hospital, meeting room #3, 15107 Van Owen, Van Nuys, CA. For more info, contact Dr. William H. Trent, 6502 Kester Avenue, #7, Van Nuys, CA 91411, (818) 988-1752.

Osborne Komputer Owners Klub (OKOK) is a microcomputer user group serving a variety of computers: Osborne, Kaypro, Commodore C128, IBM and clones. As an affiliate of FOG we serve both MS-DOS and CP/M operating systems. We offer monthly meetings, classes, public domain software library, electronic bulletin board and special purchase opportunities. Meetings second Wednesday of the month, 7:00–10:00 pm. Meetings held at the Altadena Public Library, 600 E. Mariposa, Altadena, CA. Contact Lionel Soracco, (818) 794-3243, or write OKOK, P.O. Box 40429, Pasadena, CA 91104.

Pasadena IBM PC Users Group. Meets third Wednesday of each month at Cal Tech Bridge Bldg., Room 201. Contact Steve Bass, 711 E. Walnut Street, Pasadena, CA 91101. (818) 795-2300. Send SASE.

Long Beach IBM Users Group. Meets second and fourth Wednesday of each month at 4601 E. 2nd Street, Belmont Shores. Contact Noel Roberts, president, 153 Argonne Ave., Long Beach, CA 90803. (213) 438-6515.

KAYPRO

Lakewood/Long Beach KUG is a group of Kaypro computer owners dedicated to helping each other solve problems and share information and public domain software. The meeting is open to all. Meetings at Midcities Bank, 9025 Artesia, Bellflower, CA, 2nd Wednesday of each month; 7 p.m. Contact Melvin Pasley, 4566 Shadeway Rd., Lakewood, CA 90713, (213) 421-3094.

Kaypro UG, 3134 N. Palm Shields, Fresno, CA 93704.

K-West, Orange County Kaypro users group. Meetings 2nd Monday of the month, Glendale Federal Savings, 100 Newport Center Drive, Newport Beach.

Club 16. Meets once a month in Costa Mesa at 2790 Harbor Blvd., (CBS Store) to share knowledge of the 16 bit world. It is a small group so that everyone can get to know each other and share. Large public domain library. Contact Peggy Lloyd, (714) 645-9868 for information.

LA Kaypro Users' Group. Primarily CP/M users, all brands welcome. Meets 3rd Tuesday, 6:30-9:30, Beverly Hills High School, 241 Moreno Ave., 3rd floor cafeteria, near Olympic and Spalding. Contact Allyn Franklin or Barry Cole, (213) 278-3748 or (213) 390-3851 after 11 am please.

Kayos Kaypro Users Group. Kayos Kaypro User Group invites Kaypro and CP/M users to meetings at TRW in Redondo Beach, 6:30 pm, third Monday of the month. (213) 379-8339 for details.

TUG-NET Kaypro and Osborne SIG meets 4th Thursdays, 7 pm, Central Savings, 4464 Van Nuys Blvd., Sherman Oaks. Call (818) 882-1693 for information.

Osborne Komputer Owners Klub (OKOK) is a microcomputer user group serving a variety of computers: Osborne, Kaypro, Commodore C128, IBM and clones. As an affiliate of FOG, we serve both MS-DOS and CP/M operating systems. We offer monthly meetings, classes, public domain software library, electronic bulletin board and special purchase opportunities. Meetings second Wednesday of the month, 7:00–10:00 pm. Meetings held at the Altadena Public Library, 600 E. Mariposa, Altadena, CA. Contact Lionel Soracco, (818) 794-3243, or write OKOK, P.O. Box 40429, Pasadena, CA 91104.

Kaypro SIG. Meets on the first Sunday of the month, 1:30 pm, at Chapman College. Contact Tom Gramafa (714) 995-9227. BBS: (714) 998-8080.

LEADING EDGE

OCTIPUG-SIG. Forming Leading Edge user's group. Will organize to teach DOS, Framework, dBASE III, utilities and public domain software. Meeting times and address to be announced. Contact Michael Banyacki, 24992 Spadra Lane, Mission Viejo, CA. (714) 770-3172. Leave name and phone number.

LOTUS

Los Angeles Lotus Users Group. Demonstrations, problem-solving, third-party applications, etc. For Lotus 1-2-3 and Symphony. Informal and fun. 7–9 pm, Burbank church of Religious Science, 3rd Thursday each month. Take 134E to Pass, N. 1 block. Call Don Roark, President, (818) 905-1441 for information.

MACINTOSH

Los Angeles Macintosh Group (LAMG) Be a part of the best Mac group in So. Calif. Many SIG and local groups to choose from including desktop publishing, OMNI, business, education and more. Monthly main meeting at McKinley Elementary School, Santa Monica Blvd. at Cloverfield, Santa Monica. Membership $25 annually includes 12 issues of MacDigest newsletter, access to public domain library, discounts at local stores. Call Eric Anderson, (213) 278-LAMG for information.

Ventura County Macintosh Club Mac and Lisa users invited. Membership $21/yr.; newsletter, software library, discussions and ideas. P.O. Box 7754, Oxnard, CA 93031, (805) 983-1610, (805) 499-2824.

Mac Valley Users Group. For $20/yr. membership fee you too can enjoy meetings chock full of software/hardware presentations, public domain software library, Mac articles index, software and accessory raffles, and help hotline. Broad range of users, very friendly to novices. Meetings at Burbank High School Cafeteria, Burbank Blvd. at 3rd St., Burbank, CA, third Tuesday of the month, 7:30 p.m. Contact Ruth Stever, P.O. Box 4297, Burbank, Ca 91503, (818) 848-1277.

MAC-HACers. Macintosh computer club for Hughes Aircraft employees only. Meetings 3rd Wed. each month, H.E.S.E.A. Club House, 1216 Imperial, El Segundo, CA 90745, across from LAX, 5 pm. Contact Bud Grove, (213) 606-2212, 5am-3pm, (213) 549-9664.

Orange Apple Macintosh Group. The Macintosh Meeting of the Orange Apple Computer Club meets 1 pm-4 pm the 1st Saturday of each month in the Science Hall at Orange Coast College, Costa Mesa. We have the best of the public domain software for the Mac, and several fun special interest groups which include Fast Start, Mac Modem, and Deciphering Mac Public Domain. For further info, call (714) 770-1865.

Mac Orange. Monthly newsletter, special intrest groups, monthly meetings, $20 annual dues. Meetings 3rd Wednesday of each month, 7:30 pm, Johnson Center, Santa Ana College, Bristol at 17th. Novices SIG meets at 7:00. For info write Box 1830, Santa Ana, CA 92701, or call (714) 542-9753.

MacBuddhist. Learn about computer assisted dharma study and application to daily living. Network of on-line Bodhisattvas sharing material crossing sectarian lines. Monthly meetings, last Saturday of the month. Write: 2605 N. Beachwood Drive, Los Angeles, CA 90060, (213) 464-3599.

Corporate User Groups SIG of Los Angeles Macintosh User Group establishes communication between leaders of Macintosh User Groups of companies in the greater Los Angeles area. The main purpose of the group is to share information on Macintosh use in corporations. It also consults company recreation clubs in starting and supporting company Macintosh groups. Contact Charles Shipp, (213) 970-6300w, (213) 833-9186h, for more information.

San Gabriel Valley Mac Users Group. Meets once a month to disseminate information about the Macintosh. Meetings are held on the first Thursday of every month at the City of Hope in Duarte, 7:30 pm in cafeteria complex Room B. The SGVMUG has special interest groups such as Power Users' SIG and a Novice SIG. Public domain library, monthly newsletter. Membership is $20 per year. Contact Frank Chavez on the 24 hour information line (213) MUG-ICON, or write SGVMUG, P.O. Box 792, Sierra Madre, CA 91024.

Macintosh Computer Society. General meeting on the 1st Thursday of each month at 23 Civic Center Drive, Northwest corner of Santa Ana Blvd. and Rose Street. Meeting time 7:30 pm. Membership $20.00 per year. FREE help / education meetings on the 2nd and 3rd Tuesday of each month at Progressive Savings 19900 Beach Blvd., Huntington Beach, 7:15 pm. Our huge library contains the best of Public Domain software for all the Mac family. For further info, call Robert at (714) 840-1238 or mail to 17661 Falkirk Lane, Huntington Beach, CA 92649.

Rockwell International Macintosh Users' Group (RIMUG). Meets 1st Tuesday of each month 12 noon at 2770 E. Carson St., Lakewood, CA. Al Nercessian, president. 8511 Beverly Pk. Pl., Pico Rivera, CA 90660. (213) 420-4819.

South Bay Apple Mac User Group. Meets last Wednesday of the month, 7:30 pm. Contact Gary Fortune at (213) 316-7738 for information. BBS: 534-4311.

MORROW

West LA Morrow User's Group /The Morrow Minority. 40 dedicated members, with special emphasis in WP; PD library. No dues, but $1 at door to pay for refreshments. Some classes and informal newsletter. If new, call to reserve space: Dr. Bernice Ennis, (213) 276-9096, 1833 Franklin Canyon Dr., Beverly Hills, CA. Meetings 2nd Wednesday of the month.

LA Morrow User Group. Meets 3rd Thursday each month, North Hollywood Recreation Center, 11430 Chandler Blvd., North Hollywood. Contact Jack Byers, (818) 347-7283 for information.

NEC

Orange County NEC Users Group (OCNUG). Dedicated to NEC-APC computers, CP/M-86 & MS-DOS. Always room for any experience level. Meets 3 pm, third Saturday of the month. 6642 Lenore, Garden Grove. CA 92645. Call John Bingel at (714) 897-7656 for more info.

The Los Angeles Area NEC APC Users Group meets on the first Saturday of each month at 3 pm at the I/O Interface Computer Mart, 6241 West 89th St., Los Angeles, CA 90045. Telephone (213) 410-9824. There is no meeting in January, and occasionally a meeting may be cancelled or postponed, so it is best to call before coming.

NETWARE

Orange County Network Users Group (OCNET). All users, consultants and business people interested in learning and sharing information about Netware are invited to join. We're now meeting on the second Monday of each month at First American Title, Santa Ana, CA. For more information call Mark at (714) 955-0616.

OLIVETTI

Olivetti PC User Group forming. Send SASE to Stan Cory, 29500 Heathercliff Rd. #86, Malibu, CA 90265, or call (213) 457-3879.

OMNIS 3

Omnis 3 User Group. Meets every third Wednesday of the month at Grant St. Elementary School in the auditorium. Address is 2368 Pearl St., Santa Monica. Time is 7:30 pm. The use of Omnis3 and Omnis 3+ in data processing information management systems is covered, from setup to advanced features. Expert and novice welcome. Call Zachary Sempers at (818) 701-1355 for information.

OPEN SYSTEMS ACCOUNTING

Open Systems Accounting, SoCal User's Group. OSASCUS would like to extend an invitation to users, consultants and business people interested in sharing information regarding OSAS. We'll discuss OSAS, single user and networked systems and more! We meet on the fourth Wednesday of the month at Wyle Laboratories, Irvine, CA. For more information call Mark at (714) 955-1724.

OSBORNE

TUG-NET Kaypro and Osborne SIG meets 4th Thursdays, 7 pm, Central Savings, 4464 Van Nuys Blvd., Sherman Oaks. BBS (818) 882-6045, 8-N-1, 1200 baud, 24 hours.

Osborne Komputer Owners Klub (OKOK) is a microcomputer user group serving a variety of computers: Osborne, Kaypro, Commodore C128, IBM and clones. As an affiliate of FOG, we serve both MS-DOS and CP/M operating systems. We offer monthly meetings, classes, public domain software library, electronic bulletin board and special purchase opportunities. Meetings *second* Wednesday of the month, 7:00-10:00 pm. Meetings held at the Altadena Public Library, 600 E. Mariposa, Altadena, CA. Contact Lionel Soracco, (818) 794-3243, or write OKOK, P.O. Box 40429, Pasadena, CA 91104.

Osborne National Users Group meets 2nd Fri./mo. at 7:30 pm at Wizard of Oz, 20630 Lassen St., Chatsworth, CA 91311. Contact Art Schlefstein, (818) 709-6969.

PARADOX

Southern California Paradox Users Group. Anyone with an interest in the relational database Paradox please send an SASE to Brian Smith, 350 Palos Verdes Blvd., Redondo Beach, CA 90277. Meetings are being held in LA and Orange County.

RADIO SHACK TRS

South Bay Color Computer Club TRS-80, TDP-100, Dragon. Meets third Friday of the month at Mercury Savings, 22939 Hawthorne Blvd., Torrance. Info: Andrew Corlett, 1435 W. 172nd St., Gardena, CA 90247. (213) 538-8394.

OCTUG-Orange County TRS-80 Users Group. Meets the 3rd Sunday of each month in the community room at "The City Shopping Center" in Orange. The room is near the green entrance of the mall (N.E. corner). MS-DOS SIG (Special Interest Group) begins at 11:30 am. General meeting begins at 1:30 pm. Devoted to the Tandy line of computers and compatibles. Come on down and see what it's like. For more info, contact Franco Collino, (714) 750-0887.

San Gabriel Valley TRS-80 Users Group. Supporting users of TRS-80 and Tandy computers. Meets 2nd Friday of each month at Arcadia Park Senior Citizens Center at 7:30 p.m. Monthly newsletter, various SIGs, lotsa fun & info. Contact Dan Dresselhaus. (818) 914-5831 days.

VTUG (Valley TRS-80 User Group). Devoted to users of TRS-80 Model I, II, 4, 4P, LNN or MAX-80. Speakers, presentations, raffle drawing, refreshments. No admission or membership fee, new members welcome. Meetings at Glendale Federal Savings, 7129 Topanga Canyon Blvd., Canoga Park, 3rd Thurs., 7:30 pm. Contact Fred Blechman, (818) 346-7024.

VTHG Valley TRS80 Users Group. Meets first Friday of the month at 7:30 pm, Valley Plaza Recreation Center, 12240 Archwood St., North Hollywood, CA. One block south of Vanowen St. Four blocks west of Laurel Canyon Blvd. RAM SECTION, bring all the questions, ideas and information that you have and share them. ALSO, don't forget to bring your blank diskette to exchange for the new club disk from Eric. For more information call (818) 982-0467 or write P.O. Box 9747 North Hollywood, CA 91609.

COCO 1-2-3, Color Computer, Models 1,2,3. Meets second Friday of the month at 7:30 pm, Valley Plaza Recreation Center, 12240 Archwood St., North Hollywood, CA. One block south of Vanowen St. Four block west of Laurel Canyon Blvde. RAM SECTION, bring all the questions, ideas and information that you have and share them. ALSO, don't forget to bring your blank diskette to exchange for the new club disk from Paul For more information call Harry Tischler (818) 997-6000 or write 7560 Woodman Pl. No. E8 Van Nuys, CA 91405.

Tandy 1000 (The MUG) Meets fourth Wednesdays, 7 pm, 9027 E. Artesia, Bellflower, CA. Contact Dick Sherwood, 4014 Centralia St., Lakewood, 90712, (213) 421-4014. The MUG RBBS (213) 425-0022, members only.

Color America. Radio Shack color Computer SIG meets 2:30-5 pm on the third Saturday of the month at Rosemead Community Center, 3936 N. Muscatel Ave., Rosemead. Contact Mark Randall, 2227 Canyon Rd., Arcadia, CA 91006, (818) 355-6111.

The Los Angeles-Wilshire Color Computer Users' Group, a TRS-80 Color Computer Users' Group, meets the 2nd Saturday of each month, 12:30 pm-5:30 pm in the Felipe de Neve library's community room, 2820 W. 6th, Los Angeles. Call Milton, (213) 558-4909.

United Computer Federation-San Fernando Valley Chapter. Meets the fourth Tuesday of each month at the Tarzana Radio Shack, 18545 Ventura Blvd., 1/2 block west of Reseda Blvd. Meeting starts at 7:30 pm. Meetings are open to the public and all are welcome. The UCF is a network of Tandy Color Computer user groups. For more information phone Pete Ellison, chapter president, at (818) 840-8902.

United Computer Federation-Los Angeles Chapter. Meets the fourth Thursday of each month at the Church of Christ recreational building, corner of Clark and Park streets, just off the 91 freeway in Bellflower. Meeting starts at 7:30 pm. Meetings are open to the public and all are welcome. The UCF is a network of Tandy Color Computer user groups. For more information phone Gary James, chapter president, at (213) 420-7632.

United Computer Federation-Orange County Chapter. Meets the second Sunday of each month at the Mercury Savings building on Edinger Ave., 1 block north of Beach Blvd. in Westminster. Meeting starts at 1:30 pm. Meetings are open to the public and all are welcome. The UCF is a network of Tandy Color Computer user groups. For more information phone Allen Nedrow, chapter president, at (213) 692-3073.

SBT

The Orange County SBT Users Group is being formed and is seeking members who are interested in an atmosphere that promotes the better understanding and more efficient use of the SBT Accounting Software. Contact Jay Rubin, P.O. Box 5145, Newport Beach, CA 92662, (714) 720-8171.

SANYO

Sanyo-MS/DOS Table Top Computers, 14717 South Prairie Ave., Lawndale, CA 90260. (213) 679-1151.

Zenith-Sanyo Users Group meets 10 am every first and third Sunday at 401 S. La Brea Ave., Inglewood, CA 90301. Call Alan Gillen, (213) 674-0318 for information.

Sanyo Users Group of LA (SUGLA). Devoted to users of Sanyo MBC 550/555 micro business computer. Guests welcome. Dues $15/yr. Speakers, presentations, public domain software library, information, new hardware and software reviews. Meetings 2nd Wednesdays, 7 pm, CAL State University, LA, Student Union (Bldg. #5), 4th floor in South Pasadena Room. Contact Fred Blechman, (818) 346-7024.

TEXAS INSTRUMENTS

LA 99er Computer Group. TI 99/4A support, classes and SIGs, large software library, monthly newsletter. Demonstrations, bulk purchase discounts on hardware, software and books. A good group to join. Meetings at Torrance Public Library, 3301 Torrance Blvd. (corner of Madrone), Torrance, CA. 4th Wednesday of the month, 7 pm. Contact Terrie Masters, 148 S. Maple Drive, Beverly Hills, CA 90212, (213) 271-6930.

The TI-99 Club. Yes, there still are a lot of 99's and 99/4a's around. If you own one, then get in touch with these people. They have good info for TI owners. Meetings take place at the Westminster Community Center on the third Thursday of every month at 7:00 pm. For info, call (714) 842-0859.

TI-West (Los Angeles West Side Area). Meets at DeCoursey Engineering Laboratory, 11828 W. Jefferson Blvd., Culver City, on the 3rd Monday of each month. For information, contact Lew Howard at (213)397-9668.

SYSTEM SPECIALS

KAYPRO PC w/640k, 360k floppy, 20mb seagate hard drive, Monochrome graphics adapter, monochrome monitor, MSDOS, GW basic, Wordstar EASY word proc. $1,179
Made in USA

ZENITH PC w/640k, 360k floppy, 20mb seagate hard drive, Monochrome graphics adapter, monochrome monitor, MSDOS $1,350
Made in USA

ZENITH 181 Laptop Portable w/640k, (2) 720k floppy, Backlit LCD Monitor, MSDOS, Battery operated $1,779
Made in Japan

ZENITH 183 Laptop w/640k, 720k floppy, 10mb hard disc, Backlit LCD Monitor, MSDOS, Battery operated $2,799
Made in Japan

LEADING EDGE w/640k, 360k floppy, 20mb SEAGATE hard drive, Monochrome graphics adapt., monochrome monitor, MSDOS, basic, Leading Edge Word Processor $1,169
Made in Korea

XT CLONE w/640k, 360k TEAC floppy, 20mb SEAGATE hard drive, Monochrome graphics adapter, monochrome monitor, MSDOS, GW basic 1 year warranty $1,059

AT CLONE w/1mb, 8-12mhz CPU, 1.2mb TEAC floppy, 20mb SEAGATE hard drive, Monochrome graphics adapter, monochrome monitor, MSDOS, GW basic, 1 year warranty $1,799

386 CLONE w/1mb, 16 mhz CPU, 1.2mb TEAC floppy, 40mb SEAGATE hard drive, Monochrome graphics adapter, monochrome monitor, MSDOS, GW basic 1 year warranty $3,199

COMPONENT SPECIALS

XEROX VENTURA PUBLISHER desktop publishing software	$659
ALDUS PAGEMAKER (IBM version) desktop publishing software	$559
MS DOS 3.21 w/GWbasic	$85
PC DOS 3.30	$125
8087 & 80287 math co-processors	CALL
4164 & 41256 RAM chips	CALL
TOSHIBA 3.5" 720k drive kits	$149
SEAGATE HARD DISKS	CALL
PARCO monochrome monitor 12" w/tilt swivel (green or amber)	$90
PARCO monochrome monitor 14" w/tilt swivel (green or amber)	$110
PARCO monochrome monitor 14" flat screen (Black and white)	$180
PARCO color monitor (CGA)	$265
PARCO EGA monitor (EGA)	$355
C.ITOH EGA color monitor (EGA & CGA autoswitch)	$365
Monochrome Graphics Card w/printer port	$60
Color Graphics Adapter	$53
EGA Card	$169
AT style keyboard	$60
AT enhanced style keyboard	$85
CITIZEN 120d dot matrix printer w/near letter quality mode	$190
CITIZEN MSP10 dot matrix printer w/near letter quality mode	$260
CITIZEN PREMIER 35 daisy wheel printer (Diablo 630 compat.)	$489
OKIDATA PAGELASER w/parallel adapter,toner cartrige	$1495

APPLIED BUSINESS CONCEPTS
1743 PACIFIC COAST HIGHWAY
LOMITA, CALIFORNIA 90717
(213) 539-0830

ALL COMPONENTS
IC DISTRIBUTOR

MATH COPROCESSORS

8087-2 (8 MHz)	Call
8087-3 (5 MHz)	Call
8087-1 (10 MHz)	Call
80287-6 (6 MHz)	Call
80287-8 (8 MHz)	Call
80287-10 (10 MHz)	Call

EPROMS

2732	Call
2764	Call
27128	Call
27256	Call
27512	Call

DYNAMIC RAMS

1 Meg-120ns 1000Kx1	Call
1 Meg-100ns 1000Kx1	Call
41256-150ns 256Kx1	Call
41256-120ns 256Kx1	Call
41256-100ns 256Kx1	Call
4164-150ns 64Kx1	Call
4164-120ns 64Kx1	Call
4128-150ns 128Kx1	Call
4464-150ns 64Kx4	Call
4464-120ns 64Kx1	Call

CPU CHIPS

V20-8 (8 bit)	Call
V30-8 (16 bit)	Call

CALL (800) 367-7312

Prices shown for UPS COD Cash. Prices are subject to change.
SHIPPING & HANDLING; UPS Ground $5.00, UPS Air $7.00 (under 1 lb.).

ALL MERCHANDISE IS 100% GUARANTEED.

San Gabriel Valley TI 99/4 Users Group meets 1st Wed./mo. at 6:30 pm in the Covina Parkway, West Covina, CA. Contact Tom Padilla, (213) 330-8240.

TI Riverside UG. Supporting the TI 99/4A. Meetings at Collett School, 3rd Thursday, 7 p.m. Contact Ed Butcher, 3523 McKinley St.,. Riverside, (714) 686-0336.

San Fernando Valley TI 99/4A User Group. Library, Workshops, Newsletter, How To? For further information call Jim Edwards, (818) 248-9558, 5-10 pm. Meetings 2nd Wednesday of the month, 7:30 pm, Doctor's Conference Room, Sherman Oaks Community Hospital, 4929 Van Nuys Blvd.

Antelope Valley TI UG. TI User Group. Meetings at Palmdale Culture Center, 3rd Wed., 7 pm. Contact Len Rouw, 38540 26th St. East, (805) 947-6270.

El Toro 99 Home Computer Users Group. The ET-99 Home Computer User Group meets to demonstrate programs, equipment, and discuss techniques. Contact Ken Baldwin, 23065 Sonoita, Mission Viejo, CA 92641, (714) 855-0480. Meetings at Mercury Savings and Loan, 1-5 and Lake Forest, El Toro, 2nd Saturday of each month 9 am - 12 noon.

Tri-Valley 99'ers. We have what you're looking for! Interesting guest speakers, software/hardware demonstrations, large group library, monthly newsletters. We serve the entire Conejo Valley and beyond! Contact Steve Mehr (805) 496-8725 or Chuck Salvatore, (805) 527-4129 for more information.

BUG (Brea 99er's Users Group). Meets the first Monday of the month at 7:30 pm at the Western Federal Savings meeting room, #10 La Habra Fashion Square, corner Beach and Imperial, in La Habra. For further information call Bob August at (714) 871-3405.

San Fernando Valley Texas Instruments Professional Computer User Group (SFV TI-PRO USER GROUP). Meets at 9017 Reseda Blvd. Suite #212, Northridge, on the 3rd Sunday of each month at 10:00 am. We serve the entire San Fernando and Santa Clara Valleys. Group meets to discuss: how-to techniques, programs, equipment and software. All are welcome —bring a friend. TI-Pro/AutoCAD Users are also welcome. For more info, contact Marcus Swed at (818) 993-3151 during the day and at (818) 366-0886 evenings.

The Pomona Valley 99ers Computer Users Group. Meets locally every month on the second Monday of the month. Anyone interested in home computing is welcome to come to our meetings at 7:00 pm. We meet at the Cortez Elementary School at 12750 Carissa Ave., Chino, which is south of the Pomona Freeway and west of Mountain Ave. There are demos of hardware and software. Mostly for the Texas Instruments 99/4A computer. Lots of discussion. We try to educate and stimulate interest in computer literacy and programming. If you become a member of this non-profit group you'll get a monthly newsletter and be able to get copies of the programs in the large club library of public domain software.

TIMEX-SINCLAIR

Timex-Sinclair. South Bay and West Side groups. Call John W. Petersen at (213) 545-9581 anytime or Dr. George Kuby (213) 201-2014 after 3 pm for more information.

TOMY

Tomy Tutor computer user group. Contact Eugene C. Dinovo, P.O. Box 37, Sepulveda, CA 91343.

VICTOR

West Los Angeles Victor Users Group (WLA-VUG). Victor 9000 users - you are not alone! Meet other users. Free V9000 software & purchasing discounts for members. Victor-specific bulletin board (818) 989-2216. Meetings at 8651 Olin St., LA 90034, 7 pm, 3rd Thursday, every month except December. Contact Roger Goodman, (213) 558-8363.

Orange County Victor 9000 User Group. Meets fourth Wednesday of the month at Mayward Siler & Assoc., 12062 Valley View, Suite 210, Garden Grove, CA 92645. Contact Don Henderson, 1201 Drayton Way, Tustin, CA 92680. Phone: (714) 730-6015.

WANG

Wang WP Users Group. Meets 4th Thurs. of each odd month, 6 pm. Newsletter, speakers, information network. Call for meeting place: Steven Hirsh, (213) 255-5515, or write 2858 El Roble Drive., Los Angeles 90041.

WORDSTAR

WordStar User Group LA. Now forming. for all WordStar users, regardless of computer. Discussion, lectures, presentations, & demos, including enhancement products. Shortcuts & discount purchases. All experience levels. Call for info about first meeting: Ken Adler, (818) 501-4798, (818) 783-4533.

XSCRIBE

X.C.E.L. (XScribe Court Reporters for Education and Learning). XScribe users can share knowledge, have sessions on resolving problems encountered, and keep abreast of activities in the C.A.T. field. Contact Diane Altshuler, XScribe Corp., 3366 N. Torrey Pines Ct. Suite 300, La Jolla, CA 92037. (800) 854-2919.

ZENITH

Zenith-Sanyo Users Group meets 10 am every first and third Sunday at 401 S. La Brea Ave., Inglewood, CA 90301. Call Alan Gillen, (213) 674-0318 for information.

NEED PARTS?

Electronix Outlet
1300 East Edinger #D
Santa Ana, CA 92705
(714) 541-0522

5 FWY
N
GRAND
55 FWY
EDINGER

Swapmeet Prices Every Day
Mon-Sat 10-5

We Specialize in
- *Surplus Electronics,*
- *Computer Equipment and Parts.*

10% DISCOUNT WITH THIS AD

As Featured On CBS-TV's "2 On The Town"

COMPUTER & HI-TECH FLEA MARKET

Millions In Computer Merchandise At Bargain Prices—Over 80 Sellers!

Hardware, Software, Printers, Disk Drives, Every Conceivable Computer Product!

SUN NOV 29
Veterans Memorial Building
4117 Overland Avenue
Culver City

10 AM TO 5 PM
Admission: $2
FREE PARKING
1½ Miles South Of 10
1 Mile East Of 405

FOR SELLER INFORMATION, CALL (213) 276-1577

BIGMOUTH

(See "Telephone & The PC Connection" review in this issue)

BigmOuth takes over where Conventional Phone Answering Machines End

- Voicemail capability
- Total remote control from any touch-tone phone
- Personal phonebook with autodialer
- Message forwarding

BigmOuth is Your Computer's Voice

Accurate Technologies
1724 S. Carmelina Ave.
Los Angeles, CA 90025-3626

Only $219
Through 12/31/87

Call BigmOuth *Now* at (213) 826-5362

CLASSIFIEDS

EMPLOYMENT OFFERED

Immediate openings! -Word Processors. Top companies - top pay -long & short term. Volt Temporary Services. EOE/no fee. Anaheim (213) 625-7091, Wilshire (213) 388-3271, Torrance, (213) 370-5603.

MicroTimes classifieds reach several hundred thousand California readers each month. Advertise your goods or services.
MicroTimes Classifieds
1800 N. Highland #220
Hollywood, CA 90028

HARDWARE FOR SALE

Alpha-micro AM-100 System -48K, TEI chassis, S-100 bus, parallel/serial I/O, dual 8" floppy, CRT, II-810, Amos OP sys. Sell all or part. Call Bob, (818) 347-7523.

Hewlett-Packard Computer Equipment -Buy, Sell, trade, Etc. Lots of HP=150 and Portable items. Call for list. (213) 597-0423.

Apple IIE System -10 meg sider, CP/M, many cards, software, books. Make offer, (213) 491-5610 (Scott.)

SERVICES

Custom programs -Specializing in order entry, inventory, GIL, AIR, AIP, sales. 20 yrs experience. Bernat Computer Service. (213) 586-3131.

EAGLE Technical Support
714-895-1759
If you own an Eagle system, you should call us for information !
Free Telephone Support
Parts & Service Available

SERVICES

Laser printer users, don't throw away your used toner cartridges! Save literally thousands of dollars over the life of your printer!!! Recharge only $40!!! Call Laser Cartridge Service now (818) 794-5561 or (213) 545-2325.

UNIX & XENIX EXPERT C PROGRAMMING -Automate tasks with shell scripts, batch editing. File transformations, Awk, troff. $15-$25/hr. Baseline (213) 281-8861 (24hrs).

Get 11.50% Visa/Mastercard -Guaranteed! Free details. Consumer Credit Service, 1504 Franklin, San Francisco, CA 94109.

Make $50.00/HR -assembling PC clones. Free information, send SASE to : PCIFS, 14102 Woodlawn, Tustin, CA 92680.

Custom programming -reasonable rates. Guaranteed. Free estimate. Call Monday through Friday 9 to 6. (818) 332-6273.

Computer Products Photography -advertising, catalogs & flyers. Hi-tech special effects. Quick turn around. HV, (818) 576-0468.

Super Discount Air Fare - Best service for anywhere. Special for orient. Tokyo; $549. Hong Kong; $599. Taipai; $599. Singapore; $650. India; $969. Eastern Travel, (818) 284-7366.

Mailing List Peelable Labels -Zip sort churches (order by state or denom.) $5/100. Colleges (by state) $5/100. Ellie Business, Services Dept, PO2, PO Box 836, Westminster, CA 92684.

SOFTWARE FOR SALE

99 Wordperfect Power Macros $19.95 -On-disk. Print backwards, check Pg. brks, find/display hidden codes, print address from screen to envelope, auto-bookmark, edit comments/footnotes, mail labels, srch/mark files & many more! IBM. Specify 4.1/4.2. CA res. $21.25 ppd. Power-Max, #845, 15840 Ventura Bl., Encino, CA 91436. (818) 905-5919.

RBase 5000 With Update - Hardly used, registered. Thought I'd like it better than dBase. I don't. Bargain at $150.00. Mary, (714) 621-7525.

PC Mailing List Program - Sorts, prints labels. $5.00. Tom, Box 7472, Huntington Beach, CA 92646.

SAVE A BUNDLE ON A BUNDLE
Not Just FAX Machine
Xerox Telecopier 7020 Terminal

- Plain paper convenience
- Automatic Speed/Group Dialing
- PC Printer interface (opt.)
- Convenience COPIER
- User-friendly Control Panel
- and MUCH More . . .

$130.19
(48 mo. lease)

- FREE FAX Directory $65.00 value w/purchase of Xerox 7020

COPIER LAND George Hernandez (800) 872-6482

SOFTWARE FOR SALE

SOFTWARE FOR SALE

SOFTWARE FOR SALE

BRAND NAME DISKETTES

29¢ EACH
5¼" DS/DD Min 100
39¢ Min 50
49¢ EACH
Color 5¼" DS DD Min 50
79¢ EACH
5¼" IBM-AT HD Min. 50
2 for 1 Replacement Guarantee
f found initially defective within six months
With sleeves, tabs, labels
For TYVEC sleeves, add 2¢

1.09¢ EACH
3½" DS/DD
Min. 25
Subject to availability
99¢ EACH
3½" SS/DD
Min. 25
Subject to availability

19.20¢ EACH
Min. 5
600' 120 MB Data Cartridge
15.90¢ EACH
Min. 5
205' 40 MB Mini Cartridge
3M/DEI Compatible

Immediate shipping -- Guaranteed satisfaction · Call for greater discounts on larger orders
100% Lifetime Warranty
Shipping: $3.50 per min. order $1.50 each addtl. lot MC/VISA accepted
1-800-537-1600 **OPERATOR NO.** 268
MICRO ELECTRONIC PRODUCTS

Computer dating program - start your own business! Free trial diskette. Send $3.5 postage and handling to: High Income, 8033 Sunset Blvd. # 815, Hollywood, CA 90046.

WANTED

IBM P.C. -Mono or color monitor & control. Phone after 5pm or weekends. (714) 831-5399.

No user group in your area? Start your own with a MicroTimes user group listing.
MicroTimes
5951 Canning St.
Oakland, CA 94609

MicroTimes Classifieds WORK!
Call (415) 652-3810 or (213) 467-7878

WE advertise with lots of computer magazines. MicroTimes has given us better response than any, including the high priced magazines.

Dollar for dollar MicroTimes is your best bet.

Nan Guenther
Owner - Guenther Computer Products Inc.

To Place A Classified Ad

Free Ads: Private individuals may have one free classified ad of 15 words or less,* additional words are 50¢ per word. A phone number, including area code, counts as one word. If you want your ad to run more than once, all subsequent printings will be charged at one half business rates.

Business Ads: Rates are $15 for 15 words or less. 50¢ for each additional word. Again, your phone number counts as one word.

To Order By Mail: Send coupon to:
MicroTimes Classifieds
1800 Highland Ave., #220
Hollywood, CA 90028

To Order By Phone with Visa or MasterCard only. Call: **(213) 467-7878**

Classified Deadline
January Issue: Nov. 13, noon

*All Categories EXCEPT Personal.

For a mere fraction of your paycheck—buy, sell, trade, whatever. Just $15 for the first 15 words plus 50 cents for each additional word, per issue.

Category
☐ Employment Offered
☐ Hardware For Sale
☐ Software For Sale
☐ Employment Wanted
☐ Office Space
☐ Video
☐ Personal
☐ Wanted
☐ Equipment
☐ Services
☐ Will Trade

____
____
____
____

Cost of ad __________ X number of issues to run __________ = Amount Enclosed __________

Send Check ☐ Money Order ☐
Visa ☐ or MasterCard ☐ Exp. Date __________
Account # ____________________
Signature ____________________

Aovertisers Name ____________________
Street Address ____________________
City __________ State _____ Zip _____
Phone (______) _______________

Send To: MICROTIMES Classifieds
1800 N. Highland Ave. #220
Hollywood California 90028

ADVERTISER'S INDEX

3F Associates 80,81
A-Tronic 69
Accurate Computer Solutions 88
Accurate Technologies 134
Advanced PC Products 38
All Components 134
Alpha Omega 140
Altec 37
Americal 59
American Digital Discount 31
Applied Business Concepts 133
Arrow Electronics 14
AT&T Liquidators 107
Atlantic 99
AVS-Adventure Computer 121
Binary Computer Corp "B.C.C." 97
Bitfire 85
California Computer Distributor 103
California Micro Star 7
CHA Electronix Outlet 134
Complus, Inc 34
Compucal 137
Computer Doctors 102
Computer Ease 18
Computer Partners 49,51,53
Computer Resources Company 70,71
Computer Supplies Unlimited 22
Computer Swap Inc 129
Computer Teacher 35
Computer Terminal 79
Computerlane 67
Concord Computer Products 90,91
Conference Management Corp. 123
CSI 27
CT/XT 45
Cypress Distributing 136
D&D Transworld 87
D-Data 72
DAO Products 8
Data Bureau 41
Datafox 28
Datron Peripherals 20
Digitech Research Inc. 32,33
Eastern Digital 34
Eastern Ent. 64,65
Excel Computers 84
Flori, Inc. 25
FMS 39
Fountech 14
Fox & Geller 15
Front Runner Development 29
Gates Distributing 23
GDC Computers 95
Guenther Computer 105
High Sea Sales 128
High Technology Distributing Co., Inc. 3,11
HLC Computers Inc 63
House of Computer 24
IIT Computers 113
IMC 108,109
Infosoft 114
Jinco Computers Inc 29
LA Computer Center 58
Legatech Computers 43

Shop MicroTimes For The Best Bargains, Quality, Service

Link Computer Inc. 131
Logical Choice 102
Micro Electronics 12
Micro Show 134
Micro Star 46,47
Microcom Systems 12
Microshows 98
Microtest 12
Mictro 98
Mid Cities 117
Mission PC Connections 20
Mitsuba Corporation 57
National Computer Corp 5
New Technologies 129
O'Shaunecy Enterprises 28
PC & C 61
PC International 101
PC Plus Corp 6
PC-II - Pacific Micro Data 34
Peripheral Land 125
Pillar Industries Inc. 27
Pillarco 21
QST 119
Quality Micro 77
Quarterdeck Office Systems 2
RGB 83
S.O.S. Computer 36
SAECO 25
Saranic Computers 61
Softnet Communications 28
Software World 16,17
Southland Computer Faire 89,111
Spinnaker Software 13
Supersoft 19
Tara 54,55
The Art Dept 132
The Computer Lab 30
TIC Computer, Inc. 126,127
UCR 26,139
VIP Computer 10
WEH 136
Wilkinson Software 9
Xenon 93

FREE SEMINARS / LOW-COST WORKSHOPS

DESKTOP PUBLISHING

FREE SEMINARS
Every Wednesday at 10:00 a.m.

VENTURA ALL DAY WORKSHOPS
Saturday, Nov 14th & 28th 9 til 5

RENT TIME ON OUR SYSTEMS
Full Page Monitors, Scanners, Postscript Printers

WEH is The Place for Desktop Publishing

Training ✱ Sales ✱ Support

For Reservations or Information
Call (714) 968-6511

WEH
COMPUTERS
"The Desktop/Network Experts"
18682 Beach Blvd., Suite 150, Hunt. Bch.

QMS ✱ Zenith ✱ AST ✱ ITT Xtra

MICROTIMES CLASSIFIEDS WORK!

FUJITSU

DX 2300/2400 and DL 3300/3400

DX 2300/2400
- 324 cps draft - 54 cps NLQ
- 80 column or 136 column
- Epson FX-80, IBM ProPrinter and IBM Graphics emulation
- Friction feed and adjustable tractor feed
- Quiet (less than 55dBA)
- Parallel and serial (optional) interface
- Color option available
- MTBF - 6000 power-on hours

Call for Price

DL 3300/3400
- 24-wire dot matrix
- 240 cps draft - 60 cps letter quality
- MTBF-8000 power-on hours
- IBM ProPrinter, IBM Graphics, Diablo 630 & Epson JX-80 emulation
- Parallel and serial (optional) interface
- Narrow or wide carriage
- Adjustable tractor and friction feed
- Head life 300 million strokes per wire

Call for Price

Cypress Distributing Company®

560 Lincoln Avenue
San Jose, CA 95126
(408) 297-9800

66 Granada Avenue
Long Beach, CA 90803
(213) 434-4609

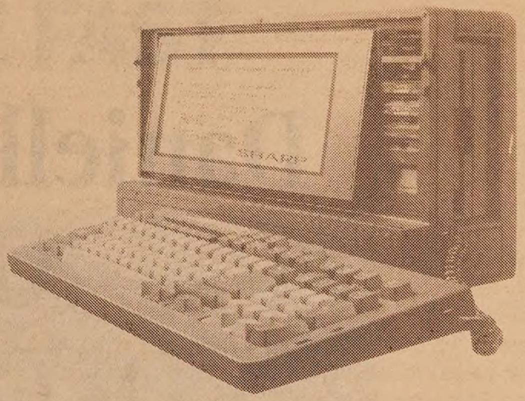
2670 Truxel Road
Sacramento, CA 95833
(916) 646-1955

Canon C. Itoh Emerson Packard Bell Personal Computer Products Panasonic Seikosha Quimax Star Micronics Prometheus Sanyo Ziyad

WE SELL, DELIVER AND INSTALL*

SHARP

PERSONAL COMPACT COMPUTER PC-7200/7100



10MHz High-Speed CPU
Illuminated Supertwist Crystal Display
Built-in 3½″ 20 MB Hard Disk Drive
Standard Internal Expansion Slot
Standard Color/Monochrome CRT Port
Detachable Keyboard with the IBM PC/AT Layout

Special Sale on Now!

90 Days Financing . . . No Payments No Interest

SYSTEMS

IBM

IBM MODEL 30 2DR, 8086 (8MHz)	1325
IBM MODEL 30 1DR, 20MB HD, 8086 (8MHz)	1750
IBM MODEL 50 1DR, 20MB HD, 80286, 10MHz	2775
IBM MODEL 60/80	CALL
IBM PROPRINTER II/XL/X24	CALL
QUIETWRITER II/III PRINTER	CALL

COMPAQ

COMPAQ 386 20MHz (NEW) MOD. 60/100/300	CALL
COMPAQ 286 MODEL 1/20/40 FROM	1995
COMPAQ PORT III, 20MHz, MODEL 100	CALL
COMPAQ PORTABLE II MODEL 4	2695
COMPAQ PORTABLE II MODEL 2	2250

AT&T Information Systems

AT&T 640K 20MB HD MONO SYSTEM	1550
AT&T 5300 PLUS 286	CALL

AST RESEARCH INC.

AST PREMIUM 286 MOD. 90/120/140/170	CALL
AST TURBOLASER EL/PS PRINTER	CALL
AST PREMIUM MODEL 80	1375

NEC

NEC MULTISPEED 640K 2DR	1299
NEC MULTISPEED EL SYSTEM (NEW)	1650
NEC MULTISYNC /PLUS/XL	CALL

TOSHIBA

TOSHIBA 3100 W/20MB, SYSTEM	3199
TOSHIBA T1000/T1200, SYSTEM	CALL
TOSHIBA P321SL/P341SL/P351-2	525/CALL
XT COMPATIBLE . . . ALL CONFIG. FROM	495
AT COMPATIBLE . . . ALL CONFIG. FROM	1095
SAMSUNG AT 1MB RAM 1.2MB DR	1299
MULTITECH ACCEL 900/700 AT/XT COMPAT	CALL

PRINTERS

EPSON

EPSON FX86e/286e	350/465
EPSON EX800/1000	425/575
EPSON LQ850/1050	CALL
EPSON LX800/LQ2500	235/999

OKIDATA

OKIDATA 192+/193+	350/499
OKIDATA 292/293 W/MODULE	525/650
OKIDATA 294/393	CALL
LASERLINE 6 128K	1575

HEWLETT PACKARD

HP LASER JET SERIES II, 512K	1599
HP SCANJET, FLAT BED SCANNER W/GRAPHIC	CALL

CITIZEN

CITIZEN 120D	199
CITIZEN MSP 10/15	275/365
CITIZEN MSP 40/45/55	CALL
CITIZEN TRIBUTE 224	699
OTC PRINTERS 750/850 CPS	CALL

MONITORS/PERIPHERALS

IBM 12″ VGA MONITOR (COLOR)	575
IBM 16″ VGA MONITOR (COLOR)	1295
AMDEK 310A 12″, AMBER	150
AMDEK 410 AMBER 12″	185
AMDEK 722 COLOR MONITOR	495
SAMSUNG EGA MONITOR	399
THOMPSON ULTRASCAN EGA	550
THOMPSON 14″ MONO/MONITOR	175
NEC MULTISYNC EGA	525
PRINCETON MAX12/HX12	155/465
PRINCETON EGA HX-12E	525
MODEMS 1200/2400 INT/EXT	CALL
HARD CARD PLUS 20MB/30MB	CALL

SPECIAL SALE PRICES ON:
Mono/CGA/EGA Monitors
Seagate 20/30/40MB Drives w/controller

THIS MONTH'S SPECIAL

NOVELL

Call for Your Networking Needs

AUTHORIZED NOVELL DEALER

We also carry these products:
Hercules, Houston Instruments, HP Laser Printers, Canon Laser Printers, Sony Monitors, Hayes Modems, Leading Edge Modems, AST Research, Sigma and others.
* Deliveries May Be Subject to Additional Charge.
* Prices subject to change without notice.

COMPUCAL, Inc.

13400 S. Prairie Avenue
Hawthorne, CA 90250

(213) 675-0115

DVORAK'S LAST COLUMN

Danielle Steele, Bill Gates And The Death Of Computerphobia

By John C. Dvorak

Romance novelist Danielle Steele may make seven or eight million dollars per year. Not bad dough for a writer. Get this: even if she made $10 million per year, she'd have to work and earn that amount every year for the next 100 years and save every penny to achieve the current net worth of 31-year-old software mogul Bill Gates of Microsoft Corporation.

Yet, when billionaire Gates shows up in Houston to address a crowd of 2,000 onlookers, the local papers show no interest in covering it. In fact, when Gates shows up in San Francisco or anyplace else, for that matter, nobody in the local press covers it. I've never seen Gates on TV, either. *And* he doesn't shun the press. Seems peculiar, doesn't it?

I like to use the example of Danielle Steele for comparison, because she's a successful novelist who few would classify as a great literary talent. So there should be no intellectual interest in her that would attract the attention of a newspaper. Note the word "should." Let's face it, if she gave a talk to 45 old biddies at the Junior League Hall in Buckley, Iowa, it would probably get media coverage and maybe an AP wire story. Exactly why is she newsworthy? Because she makes a lot of money for her hard work? That's the only reason I can figure. Meanwhile, the Houston *Tribune* tells Fred Thorlin, the promoter of the Gates talk for the Houston Area League of PC users, that they don't care about Gates.

The paper figures nobody is interested in this technology stuff. They feel this way despite the fact that Houston is a hotbed of computer users. Houston is one of the hottest high tech areas in the country, probably second or third only to Silicon Valley and the New England Route 128 enclave. In fact Texas is jammed with high tech firms. NASA, Texas Instruments, Motorola, IBM-Austin, and Compaq are just a few of the hundreds of hardware and software companies down there. You'd never know it if you read the vapid coverage of technology in the Houston and Dallas papers.

Now it's not that I want to see a kid promoted to death. It's not media neglect of Gates that's a problem. Today's media, whether newspapers, magazines or TV, ignore technology, specifically small computer technology, largely because they are peopled by old timey editors and reporters who are simply intimidated by it all and who are afraid they'll look like idiots when in the presence of a Gates. So they avoid him.

Standing out like a New Guinea tribesman at a Baptist prayer breakfast are the New York-based book publishers. No computers anywhere. Heaven forbid someone doesn't like to completely retype a document by hand over and over.

When editors are grilled about this their excuse is always the same, "Nobody on the staff can write about this stuff. Anyway, people aren't interested." Meaning *they* aren't interested. Surely there are more computerists who are interested in this stuff than, say, hot rods, real estate investments, stamp collections or even gardening. All these subjects are covered to death by the press.

The naivete of the newspapers is reflected in the writing. When papers cover small computers they assume that the reader is a complete idiot and has to have every supposed new term explained over and over. (A new term to this crowd is a technology or engineering term that has been around for at least 20 years).

Recently, I recall that even the *Wall Street Journal* explained within the body of an article what a microprocessor is, as if the reader had no idea. Now these things have been around since the early 1970s and have been explained to death. *Time* Magazine made the computer the Man of the Year a couple of years ago and everybody figured that that event put the matter to rest. Nope.

The fact that a 12-year-old can effortlessly understand and use a microcomputer should tell you something about their complexity, shouldn't it?

Meanwhile, the real trend is towards using computers all the time by everyone. Freelance writers and book authors are leaders in this movement. Too bad their publishers can't keep pace. Only a few moneymaking professional writers still use a typewriter. Those who don't will probably never change if they don't change soon. The machines are now getting complicated and there's no reason to hold back the advances because a few laggards haven't the gumption to get on board.

The old technologies will be incorporated into "smart" typewriters and the computerphobes will have a computer anyway and not even know it. Their disadvantage is that their computer — the electronic "smart" typewriter — will be more in control of things than they will. Just the opposite of the ideal relationship a writer has with a computer.

Standing out in this crowd like a New Guinea tribesman at a Baptist prayer breakfast are the New York-based book publishers. No computers anywhere. Heaven forbid someone doesn't like to completely retype a document by hand over and over. Editing and retyping are what computers do best for a writer. A writer can grind out a complete book at eight pages per minute off of a laser printer. And that's while reading the newspaper or while working on another book. To the real power hungry user, though, even this is scarcely taking advantage of the possibilities.

The easiest way to handle the printed word is by sending documents from computer to computer over the phone lines. Why should hard copy even be part of the publishing scene when the document has to be rekeyed anyway? If a writer cannot be edited on a display tube, then the writer shouldn't be published. Hard copy should be kept to a minimum — the finished book or article should be the *only* hardcopy. But despite the fact that the typesetting equipment is computerized and digital editing is available, and used by most magazines and newspapers, there is little (if any) computer-to-computer transmission of documents in today's publishing world.

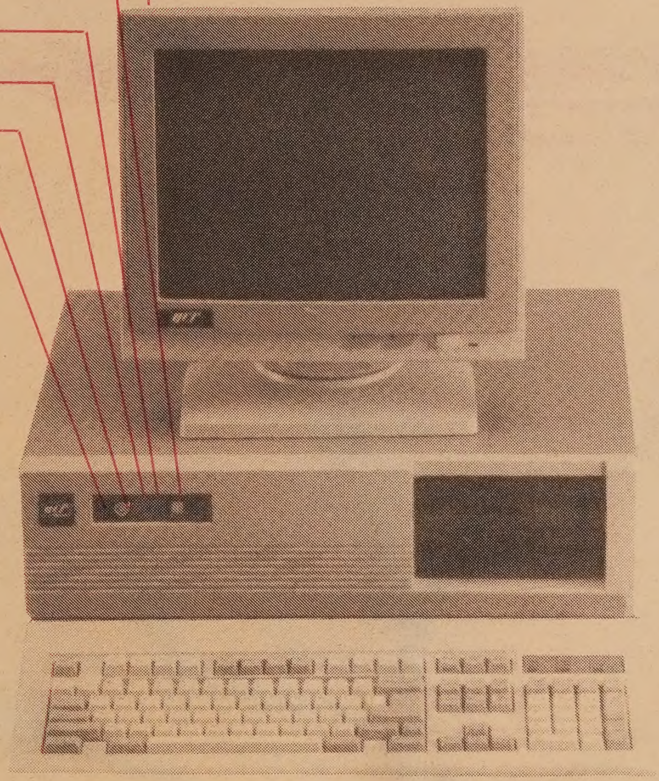
Let's just say that this is now a laughable position. I imagine a stone carver arguing with an ancient about the viability of ink and quill writing. "It'll fade. The quills are too hard to use. Give me a hammer and chisel any day. Now *that's* writing!"

And *this* is ramblin'. It could have been as easily done with a typewriter. It just would have taken far longer. ☐

Copyright © 1987 by John C. Dvorak. All rights reserved.

Let The Record Show
For Price & Performance The Name Is UCR
PRICED TO MOVE FAST

ASK ABOUT . . .
90 Day Financing
NO INTEREST
Buy now pay next year
No payments
until Feb. '88


Samsung Amber TTL monochrome w/swivel base monitor
System Reset Switch
Turbo Indicator Switch
Hard Disk LED Indicator
System Security Lock
Main Power Indicator

UCR AT 386

w/60 MB Hard Disk

- Full Hardware and Software compatible
- Runs Lotus 1-2-3, Flight Simulator, Symphony, dBase II & III, Auto CAD, Wordstar and more . . .
- 16 MHz 80386 CPU
- 1 Meg Memory (expandable to 2 Meg)
- One (3.5″) Floppy Disk Drive
- Fixed & Floppy Controller
- 80287 Co-Processor Socket adapter
- Monochrome Graphic w/Printer Port
- Enhanced 101 key Keyboard
- Samsung TTL Amber Monitor with Swivel base

$2995

30 Meg
TURBO BULLET

- w/Swivel Monitor
- 30 Meg Hard Disk
- IBM RT Style Keys Enhanced Keyboard
- 640K Memory
- 4.77 or 10MHz Dual Speed
- Switchable 8088 Microprocessor
- 8 Expansion Slots (6 available)
- One 360K Toshiba Disk Drive
- 150w Power Supply
- 8087 Co-Processor Socket
- Serial/Parallel/Game Ports
- Clock/Calendar Ports
- Speaker
- Special Turbo Metal Case w/Keylock, Power Light and LED Turbo Indicator
- FCC Approved

$995

40 Meg
AT System

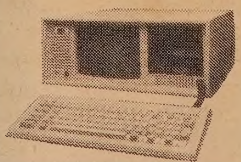
- w/Swivel Monitor
- 640K RAM on 6/10MHz Motherboard
- 200 Watt Switching Power Supply
- Mono/Graphic/Printer
- One 1.2 Meg Floppy Drive
- Fixed & Floppy Disk Controller
- Standard AT Keyboard
- Case w/LED & Lock
- 40 MEG Seagate HD. (38ms)
- Limited One Year Warranty
- (12 MHz Available)

$1495

PC (Portable System)

- 640K on Motherboard
- Two Floppy Drive w/Controller
- Video Graphic Card w/Printer Port
- Amber Monitor
- Standard Keyboard

XT **$899**
AT 286 . . **$1299**
AT 386 (1 Meg). . **$2899**



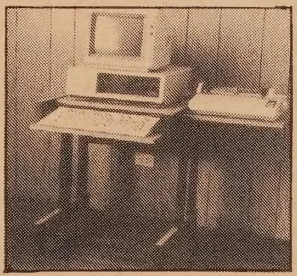
SPECIAL OFFER

Complete System
includes: Computer/Printer/Table

IBM Compatible
Turbo-8 Color System
640K RAM on 4.77/8MHz CPU
150 Watt Power Supply
2 (Toshiba) Floppy Drives
Color Graphic Card
Serial/Parallel Port
Game/Clock & Calendar Adaptor
AT/XT Keyboard
Color (Nanao) Monitor

Printer
NP-10 Printer w/cable
Dot matrix/100 cps
Wac tractor feeder

Table
Table w/slider tray



Suitable for IBM Compatibles
Slide-in Keyboard Tray
Pull-out side tray for 80-Column printer
Dimensions
27¾″ × 26″ × 29¾″

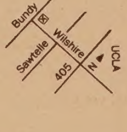
Sale Price $1055
Retail $1255

Free: w/any system purchase receive
5 Public Domain Software
Limited to availability

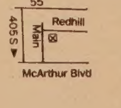
UCR™ Business Centers
United Computer Resources

* IBM XT, AT is a trademark of International Business Machines
* Limited to Product Availability

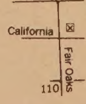
12007 Wilshire Blvd.
Between Bundy & Sawtelle
Santa Monica, CA 90404
(213) 473-5668
(213) 473-6710



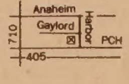
17985 Sky Park Circle #C
Main St. Corner
Redhill St.
Irvine, CA 90714
(714) 250-9029
(714) 250-9032



450 S. Fair Oaks Ave.
Pasadena
(818) 440-9821
(818) 440-9822



1310 A. W. Gaylord Ave.
Long Beach, CA 90813
Tel: (213) 491-0640
(213) 436-8515
(213) 436-8619



We're Tired of Being Known For Our GREAT Service.

Please look At Our Prices. Consultants & Dealers Call For Further Discounts.

AT Compatible Best Buy!

INTELLIGENT AT 12 Mhz

This is the exact computer featured in our network system. Combine the power of Intel's 80286 chip, keyboard-switchable 12 Mhz with 0 or 1 wait states for lightning-fast processing, eight expansion I/O slots, Clock/calendar, S/P ports, 512K, 1.2 MB floppy and F/H controller, MS-DOS 3.2 and a 13-month warranty. All at a remarkable price!

Intelligent AT 12 MHz $1249
(Sug. Retail: $1579)

HOT-LINE SUPPORT

Flash! We are the only direct marketer offering telephone hotline support. Get all the applications help you need on our desktop, CAD/CAM and accounting/networking packages. Only $300 per year buys up to ten full hours of telephone support!

Turbo Hard Disks™

Major Price Cuts on Most Models!

COMPUTER BUYING GUIDE dubbed them "Best Buy of 1986". PC WORLD called the "the best performer", while PC WEEK noted they need "only DOS and a screwdriver to install." Includes hard disk controller and all cables.

IBM PC/XT®, AT&T®, Compaq®, & Compatibles

TURBO 20™ 22 Mb. 3.5" Half Ht. HD, ext. shock mounted	**$279** (Sug. Retail: $599)
TURBO 30™ 33 Mb. 5.25" Half Ht. HD.	**$389** (Sug. Retail: $699)
TURBO 45™ 48 Mb. 5.25" Half Ht. HD, RLL high perf.	**$470** (Sug. Retail: $899)
TURBO CARD DISK 20™	**$349** (Sug. Retail: $699)
TURBO CARD DISK 30™	**$499** (Sug. Retail: $849)

IBM AT® and Compatibles

TURBO 20 AT™ 22 Mb. 3.5" Half Ht. HD, ext. shock mounted	**$269** (Sug. Retail: $455)

Premium Desktop Publishing

What a system! Anchored by the sleek, new AST Premium/286 (6-8 10 Mhz with 0 wait states, 512K, 1.2 Mb floppy, clock/calendar, MS-DOS 3.2) Supercharged with a Seagate 30 Mb. Warp Hard Disk. And displayed on the super hi-res 19" Laserview monitor by Sigma Designs with 1664 x 1200 pixel resolution and true WYSIWYG.

Wait, there's more! We've included a state-of-the-art flat-top scanner by Datacopy. This scanner not only digitizes pictures and documents, it can scan material out of books and periodicals! And a great deal on the brand new Hewlett-Peckard Laser Series II, with 8 page-per-minute, correct-order output; a smaller footprint; full-page 300 dpi graphics; and optional plug-in memory cartridges.

Plus PageMaker, Microsoft Windows, Microsoft Mouse, and the prernier word-processing package for quality desktop publishing, Microsoft Word. Whew!

COMPLETE SYSTEM $8979
(Sug. Retail $11598)

ACCOUNTING USERS: MEET NOVELL!™

Need to connect your business operations with power, versatility and ease of use? The Alpha Omega Network/Accounting System has it all. "I stand behind this network package all the way," says our president, Steve Kessedjian. "We use it every day, and it's the easiest and most reliable network and accounting package ever. You can put it to work right out of the box."

Talk about a complete system! You get three computers, including the great new Intelligent AT, which runs at an incredible 12 Mhz with no accelerator card needed, jumper-selectable for 0 or 1 wait states. And the Intelligent has an AST-style keyboard with 12 function keys, 1.2 MB floppy disk drive and 30MB Seagate hard disk, with high-speed 28 ms. access time.

For stations, we have chosen the versatile PC II XT-compatible computers running at 4.77-8-10 Mhz (also available separately — a great buy!). The PCII comes with 256K expandable to 640K and one floppy disk drive. All three computers come with MS-DOS 3.2, Hercules-compatible mono graphics card and 12" monitor.

Next, we add Novell's 286 G Net. Novell invented the file server and continues to be the undisputed industry leader with more than 4,000 users world wide.

Finally, there's the incredible network accounting package by Computer Associates, EasyPlus Network Manager. We start you off with G/L and A/R, but we're pretty certain you're going to want to add their other modules too, including A/P, order entry, inventory and payroll.

Thousands have paid upwards of $20,000 for systems that do less. (We run this system in-house with 13 stations, and it performs 100%.) Don't let this one pass you by!

COMPLETE SYSTEM $6779
(Sug. Retail: $8799)

LEASING IS AVAILABLE!

COMPLETE AUTOCAD™ SYSTEM

One-stop shopping for CAD/CAM applications. Our system brings together some of the finest names in the business: AST Premium/286 with Seagate 30 Mb Warp hard disk; EGA card; NEC Multisync color monitor, with 640 x 480 resolution, hardware zoom and pixel panning; Roland eight-pen plotter with A- and B-size plotting and digital readout; and, or course, AutoCad, the World's most popular CAD/CAM program.

CAD/CAM SYSTEM $6399
(Sug. Retail $7998)

HAYES-COMPATIBLE

2400-BAUD

It's true. An internal, 2400 baud Hayes-compatible short card modem for under $300! Or a 1200 baud for under $125! Both come with a built-in speaker, software and a FIVE-YEAR WARRANTY.

TURBO 2400™ Modem . . $269
(Sug. Retail: $399)

TURBO 1200™ Modem . $95
(Sug. Retail: $199)

THIS MONTH'S SPECIALS

5¼ DSDD diskettes	$9 box
5¼ 96TPI diskettes	$25 box
HP Lazer Jet II	$1660
NEC Multisync Monitor	$549
Okidata 192+/193+	$335/475
Okidata 292E	$559
Okidata Laserline 6	$Call
Teac 360K/1.2MB	$88/115
Samsung 12" TTL Monitor	$49
1200 Baud Internal Modems w/software	$199
2400 Baud Internal Modems w/software	$269
NEC P6 Printers	$495
Compaq 286 Mod 1	$2150
Compaq 386 Mod 40	$4800
Compaq Portable III Mod 20	$3755

CPU's

AST 286 Model 80	1349
Compaq 386 Model 40	4690
All New IBM PS2 Models	29% off
IBM-AT w/Keyboard	1895
Compaq Desk Pro 386 Model 70 w/70MB H.D.	4490
Toshiba 1100	990
Toshiba 3100	3790
Multitech 910	995
Cal Pak-XT w/1 Drive, 640k, Mono Card & Monitor	599
Wyse 30 Terminal	325

PRINTERS

Juki 6100 Letter Quality	119
Juki 6300 45CPS LQ	495
Juki 5510	149
Okidata 192	219
Okidata 193	375
Epson LQ-1500	695
Epson H1-80 Plotter	149
Epson RX-286E	449
Epson Homewriter 10	125
Genicon 1020 (18 Wire)	495
H.P. Laser Jet w/Font Cartridge	1295
American Epson RX-85	220
Toshiba P1340	249
CITOH Daisywheel	495
Sweet P Plotter	499

MONITORS

Princeton HX-12	320
Princeton MAX-12	129
Amdek 310-A	119
Amdek 710 Color	299
Amdek 610 Color	249
Amdek 300 Color	149
Compaq Desk Pro Monitor	179
Mitsubishi Color	225
Packard Bell Amber	49
IBM Color Monitor	349
IBM EGA Monitor	599

30-DAY TRIAL OFFER & GOLD SEAL EXCHANGE WARRANTY

Why take chances? We back every sale with a 30-day, money-back guarantee! You get 30 days to make sure our products perform the way our ad claims, or we refund your money. All products manufactured by Alpha Omega are covered by our incredible 13month defective exchange warranty. With the first 30 days of this warranty, if anything goes wrong with any product and we can't fix it OVERNIGHT, we'll rush you a brand new replacement free! JOIN OUR MORE THAN 8,000 SATISFIED CUSTOMERS!

TOSHIBA™ LAPTOP ACCESSORIES

Need to swap files between your Toshiba laptop and PC/XT/AT machines? We have two solutions. Plug a 5 1/4" floppy disk drive into your T-1100 or T-3100 in seconds. Or add a 720K internal or external, double-sided 3 1/2" disk drive to your desktop system. Both at the lowest prices in town.

External 5.25" Drive $199
(Sug. Retail: $400)

Turbo 720 K

3.5" Floppy Disk Drive

PC/XT/AT & Compatibles

Now you can add a great double-sided 3.5" floppy disk drive to your system for the lowest price in town! Available as an internal or external unit, this 720 K drive is ideal for software conversion for your lap top portables or for backing up your hard disk. it requires DOS 3.2 and comes with brackets and cables.

TURBO 720K™ $149
(Sug. Retail: $199)

CORPORATE BUYERS SERVICE

Please call us for prices on the individual components featured in any of our systems, quantity pricing, further technical information or product literature. We offer a 2% discount for Cash in Advance, and we also offer a variety of leasing options and credit terms to qualified accounts. Visa and MasterCard are accepted. Please note that there is a 15% restocking fee on any non-defective merchandise returned for cash refunds.

We Also Carry These Major Brands

AT&T HEWLETT PACKARD
OKIDATA AMDEK EPSON
Microsoft NEC
NOVELL COMPAQ
AST RESEARCH INC. IBM

Join our more than 8,000 Satisfied Customers!

Air France Airlines
American Airlines
American Express
AT&T Technologies
Beatrice Company
Cedar Sinai Hospital
Chevron/USA
CIT Financial
Citibank N.A.
Citicorp N.A.
Columbia University
Delta Airlines
De Paul University
Dunn & Bradstreet
Eastern Airlines
Exxon Corporation
Fuji Photo
General Dynamics
General Electric
GTE
Honeywell
Hughes Aircraft
Hyatt Regency
IBM
ITT
Los Angeles Times
Magnavox
Miller Brewing
Motorola
NASA
NBC Entertainment
NCR Corporation
Nissan Corporation
Occidental Petro
Pacific Bell
Pepsi Cola Company
Princeton University
Purdue University
RCA Corporation
Rockwell
Sears Savings Bank
Sunkist Growers
Teledyne Electronics
Texas A&M University
Toyota Corporation
TRW
United Airlines
University of Chicago
Westinghouse Electric
Yale University

S&J AlphaOmega
COMPUTER PRODUCTS

ORDERS ONLY: 800-874-0596
Product Inquiries: 818-345-4422
Tech Support: 818-345-9386

S&J Alpha Omega
Computer Products, Inc.
18612 Ventura Blvd., Tarzana, CA 91356